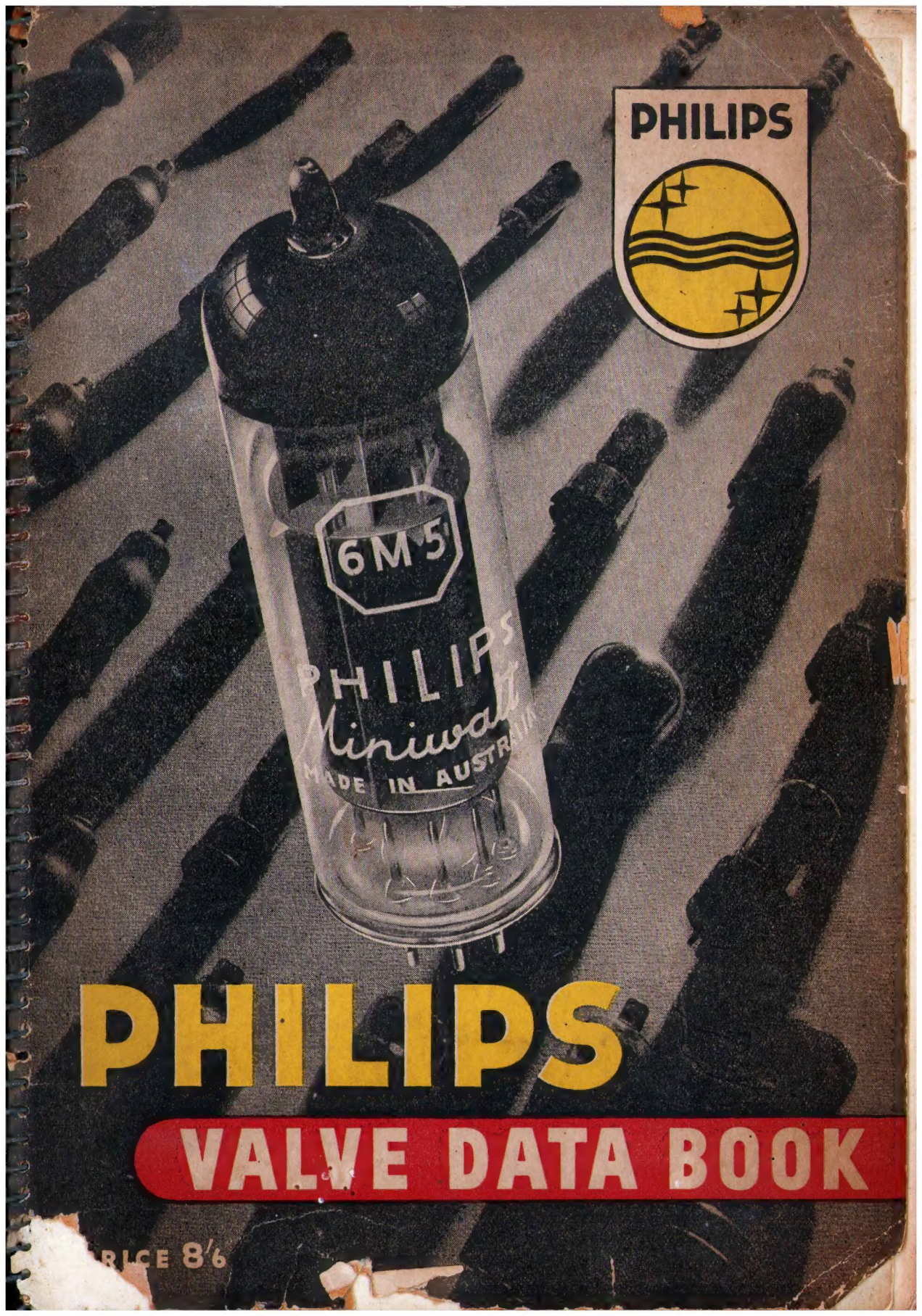

PHILIPS

VALVE DATA BOOK

PRICE 8/6

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VALVE DATA BOOK

LIST OF SYMBOLS AND ABBREVIATIONS

The symbols used in this book have been divided into two groups, viz.:

(A) those used in the data columns;

(B) those used in the base pin connection columns.

This procedure is necessary to obviate confusion arising from some degree of duplication existing in the conventionally adopted symbols used to indicate electrical units and valve electrodes.

In certain cases use has been made of both inferior and superior suffixes in association with the symbols. In general, these suffixes have three main applications, as follows:—

(1) To identify the various grids of a multi-grid assembly, that grid closest to the cathode being designated as Grid No. 1; e.g.:
   G_1 represents Grid No. 1 or signal grid of a pentode,
   G_2 represents Grid No. 2 or screen grid of a pentode.

(2) To identify the various sections of a multi-purpose valve; e.g.:
   G_1^h represents Grid No. 1 of the hexode section of a triode-hexode converter,
   G_1^t represents Grid No. 1 of the triode section of the same valve.

(3) To identify the various sections of a multi-section valve, e.g.:
   A', G_1' and K' represent the anode, grid and cathode respectively of one section of a twin triode, while
   A", G_1" and K" represent the anode, grid and cathode respectively of the second triode.

Additionally, some suffixes have individual meanings: for instance, A_s represents the starting anode of a gas-filled rectifier. In general, it will be found that the meaning of the suffixes is self-evident when reference is made to the title given to each particular valve in the "Description" column.

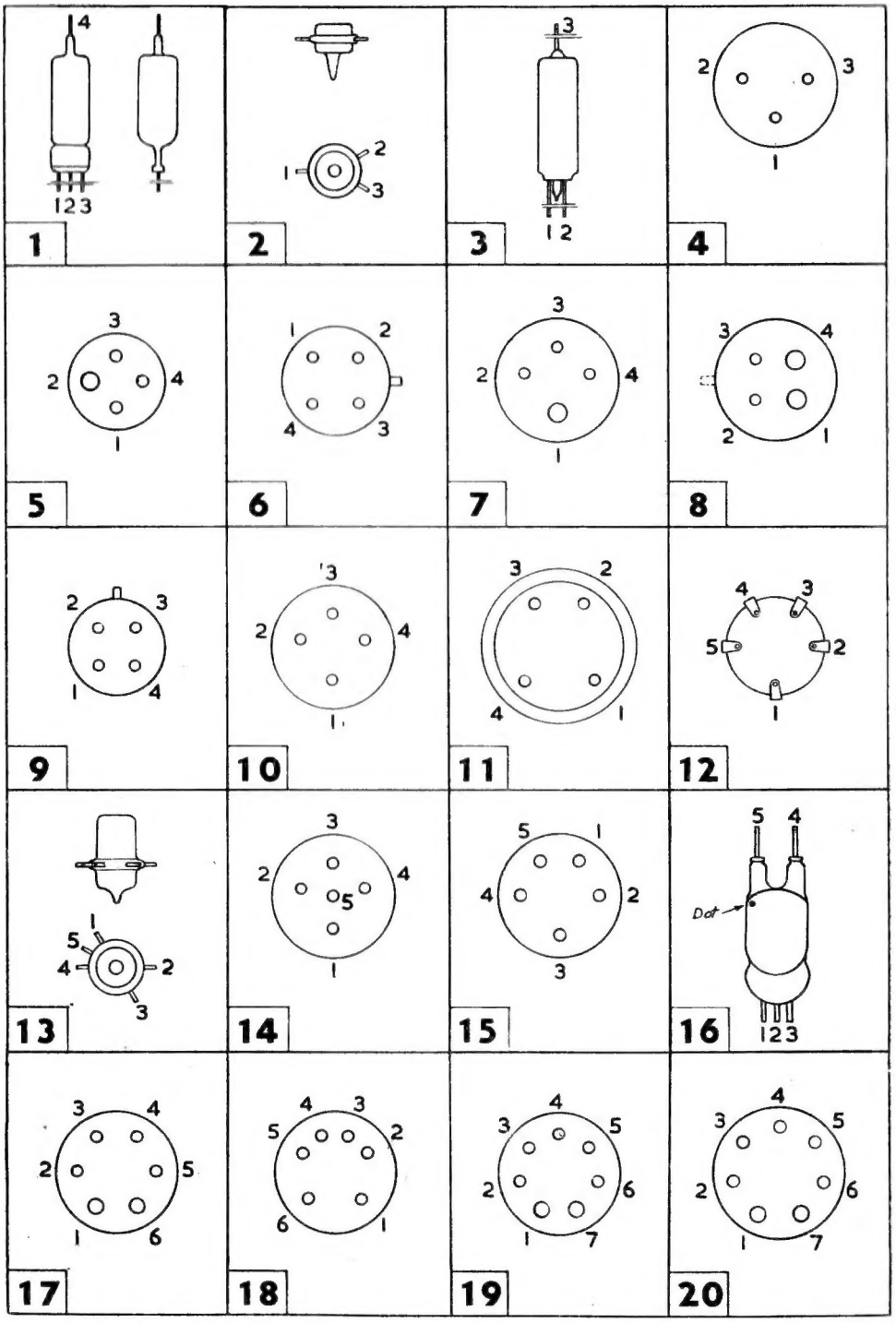
(A) IN DATA COLUMNS

A	amperes	mW	milliwatts
°A	degrees Angstrom	P.E.	photo-electric
AC	alternating current	R	resistor
AF	audio frequency	R_s	shunting resistor
AVC	automatic volume control	R.C.	resistance-capacity coupled
B+	DC voltage supply, positive terminal	R.F.	radio frequency
B—	DC voltage supply, negative terminal	R.M.S. ..	root mean square
		U.H.F. ..	ultra high frequency
cm	centimetre	μ	amplification factor
D	diode plate	μA	microamperes
DC	direct current	μF	microfarads
d	dynode	μmhos ...	micromhos
dB	decibels	μsecs	microseconds
F	filament	$\mu\mu$F	micro microfarads
°F	degrees Fahrenheit	V	volts
FM	frequency modulation	V.H.F. ...	very high frequency
G	grid	W	watts
G_m	mutual conductance	Ω	ohms
H	heater	approx. ..	approximately
I_a	anode or plate current	auto. ...	automatic
K	cathode	conv. ...	conversion
°K	degrees Kelvin	freq.	frequency
Kc/s ...	kilocycles per second	max.	maximum
kV	kilovolts	min.	minimum
Mc/s ...	megacycles per second	osc.	oscillator
MΩ ...	megohms	sens.	sensitivity
mA	milliamperes	>	greater than
mm.	millimetres	<	less than
mV	millivolts		

(B) IN BASE PIN CONNECTION COLUMNS

A	anode or plate	H	heater
A_s	starter anode	H_t	heater tap
BS	base spigot	IC	internal connection
D	diode plate	IS	internal shield
DE	deflection electrode	J	jumper connection
d	dynode	K	cathode
E	electrode	M	metallization
F	filament	NC	no connection
F+	filament positive	R	resistance
F—	filament negative	S	shield or base shell
F_t	filament tap	T	target
G	grid	TC	top cap

BASE FIGURES



BASE NOMENCLATURE

In the description of bases given below, reference is made to the country in which the base was originally introduced. Throughout the years, however, with an ever-increasing tendency towards world standardisation, many of the bases shown are now internationally accepted.

To-day their use in countries other than that of their origin is not merely confined to the production of types equivalent to those of the originating country, but also includes types of purely local development.

Drawing No.

1. European special all glass miniature construction.
2. European radial 3-pin base.
3. European special wire-in all glass miniature construction.
4. European 3-pin base.
5. American W.D. 4-pin base.
6. American 4-pin bayonet base.
7. European special 4-pin base.
8. American { dwarf shell / small shell / medium shell } 4-pin base with or without bayonet pin.
9. American small 4-pin NUB base.
10. European 4-pin base.
11. European special large 4-pin base.
12. European side contact 5-pin base.
13. American radial 5-pin base.
14. European 5-pin base.
15. American { small shell / medium shell } 5-pin base.
16. European special all glass miniature construction.
17. American { small shell / medium shell } 6-pin base.
18. European 6-pin base.
19. American small shell 7-pin base.
20. American medium shell 7-pin base.
21. American miniature button 7-pin base.
22. American radial 5-pin base with end terminal.
23. European 7-pin base.
24. European 7-pin base.
25. American radial 7-pin base.
26. European side contact 8-pin base.
27. European 8-pin base with locating spigot.
28. European 8-pin miniature base (Rimlock)
29. American 8-pin lock-in base.
30. American { dwarf shell / small shell / intermediate shell / small wafer with metal shell / medium shell } octal base, 5-, 6-, 7- or 8-pin.
31. American small button sub-minar 8-pin base.
32. American small button Noval 9-pin base.
33. European 9-pin lock-in base.
34. American special photo-electric cell construction.
35. Candelabra double contact bayonet base (international electric lamp cap).
36. European special 2-pin base.
37. European special 2-pin base.
38. European special photo-electric cell construction.
39. European special photo-electric cell construction.
40. Edison screw base (international electric lamp cap).
41. American Pee Wee 3-pin base.
42. Giant Edison screw base (international electric lamp cap).
43. European special coaxial construction.
44. American small shell sub-magnal 11-pin base.
45. European sub-miniature 5-pin base (10 mm.).
46. As No. 45 after forming leads.
47. European sub-miniature 5-pin base (5 mm.).
48. European special side contact 3-pin base.
49. European sub-miniature 4-pin base.
50. American oval sub-miniature 5-pin base.
51. European end-on photo-electric cell construction 2-pin wire-in base.
52. Special disc-seal (lighthouse) construction, with American octal 5-pin base.

PHILIPS

VALVE DATA BOOK

Fourth Edition

1952

Published by the Radio Valve Application Division

PHILIPS ELECTRICAL INDUSTRIES PTY. LIMITED

69-73 CLARENCE STREET, SYDNEY
AUSTRALIA

Wholly set up and printed in Australia by
HOGBIN, POOLE (PRINTERS) PTY. LTD., 331 KENT STREET, SYDNEY.

PREFACE

The Philips Valve Data Book is intended as a quick reference of essential data for those engineers and servicemen encountering a multiplicity of receiving and other miscellaneous valve types in their everyday occupations.

The requirement for a single comprehensive data source became apparent as an ever increasing number of valve types reached the market in the late 1930's. The Philips Valve Data Book, first published some twelve years ago in answer to this need, is offered as a service to all valve users.

In preparation of this, the 4th Edition, the work has been completely revised and enlarged. Within its covers will be found technical data not only for those valve types enjoying present-day popularity but also for types of major importance used during the past 25 years. Over 600 new types have been added.

The binding and format have been changed to achieve greater ease in use. All relevant information is now available at a single opening.

Information for both European and American valve types is included and where a valve of identical characteristics is available in both systems of type numbering, cross reference is made. This feature will prove particularly valuable in those countries where valves from both sources are available.

Space has been provided at the end of the book to allow the user to add technical data for new types as desired.

RECEIVING VALVES AND THEIR TYPE NUMBERING

In the early years of valve manufacture, identification of different valve types was left to the choice of individual manufacturers. There was no recognised system. With the increase in valve usage and the introduction of a great number of new types, many of which varied only in some minor degree to an already established type, much confusion resulted.

Valve manufacturers in the United States of America were the first to attempt some degree of standardisation of type numbering. Ultimately, as a result of their efforts, this function was delegated to an independent co-ordinating authority—the Radio Manufacturers' Association (R.M.A.), which body has in recent years changed its name to that of the Radio and Television Manufacturers' Association (R.T.M.A.).

With very few exceptions all electronic devices manufactured in the U.S.A. to-day are registered with the R.T.M.A. and bear type numbers allocated by that organisation. The major disadvantage of the R.T.M.A. system of type numbering is that it does not indicate the class of valve involved and/or the purpose for which it is intended.

There is a present-day tendency for manufacturers in countries other than U.S.A. to also register their valves with the R.T.M.A., and in this way a commendable trend towards world standardisation is being evolved.

The position in Europe was always more difficult to resolve, as standardisation would have required an understanding on an international basis. Lacking any acceptable independent co-ordinating authority (similar to the American R.T.M.A.), valve-type numbering has remained the prerogative of the individual manufacturer. There has, however, been an increasing usage of the type-numbering system first introduced by Philips (Holland) in 1934. To-day by far the greater number of valves sold in Europe bear these Philips system type numbers.

The greatest advantage of the Philips system of type numbering is, that with a knowledge of the basic code, it is immediately possible to identify the type of construction and the purpose for which the valve is intended.

Because of its world-wide activities the Philips organisation is currently using both European and American type-numbering systems for its product, and in this publication cross-referencing has been used where identical valve types appear in both classifications.

Each type-numbering system does convey certain important information to the valve user, and an understanding of the basic concepts of each system as given below will prove invaluable.

1. EUROPEAN SERIES—OLDER SYSTEM (PRIOR TO 1934)

The type numbers allocated to Philips receiving valves prior to 1934 consisted of a letter followed by either a three- or four-figured number (e.g. A415, B2043). In this system the letter indicated the filament or heater current, whilst the first figure in the case of a three-figured number, and the first two figures in the case of a four-figured number, indicated the filament or heater voltage. The last two figures of the number indicated the amplification factor if the valve was a triode, or, in the case of a multi-grid valve, the type classification. The key to this system is given in the following tables.

Letter

A—Filament current of 0.06-0.10 amps.
B—Filament current of 0.10-0.20 amps.
C—Filament current of 0.20-0.40 amps.
D—Filament current of 0.40-0.70 amps.
E—Filament current of 0.70-1.25 amps.
F—Filament current of 1.25 amps. and over.

1st Figure or 1st and 2nd Figures (see text)

Filament or heater voltage.

2nd and 3rd Figures or 3rd and 4th Figures (see text)

(i) *For triode valves.*—Amplification factor for published operating conditions.

(ii) *For multi-grid valves.*—

41, 51, 61, etc.: Tetrodes with space charge grid.
42, 52, 62, etc.: Radio frequency tetrodes.
43, 53, 63, etc.: Output pentodes.
44, 54, 64, etc.: Diode triodes, diode tetrodes (binodes).
45, 55, 65, etc.: Remote cut off R.F. tetrodes (selectodes).
46, 56, 66, etc.: R.F. pentodes.
47, 57, 67, etc.: Remote cut off R.F. pentodes (selectodes).
48, 58, 68, etc.: Hexode mixers.
49, 59, 69, etc.: Remote cut off hexode mixers.

2. EUROPEAN SERIES—PRESENT SYSTEM

The present system used consists of a number of capital letters followed by either one or two figures (e.g. EBC3, EL33). The first letter indicates the filament or heater rating, whilst the remaining letters give the type classification. The figures indicate both individual type identification and the valve base and/or type of valve construction used. In some cases a letter suffix is used to indicate a minor constructional or characteristic change (e.g. EL33—EL33A). The key to this system is given in the following tables.

1st Letter (Filament or Heater Ratings)

A—4V. AC type.
B—180mA DC type.
C—200mA AC/DC type.
D—Battery types up to 1.4V. DC.
E—6.3V. AC type.
F—13V. car radio type.
G—5V. AC type.
K—2V. battery type.
P—300mA AC/DC type.
U—100mA AC/DC type.
V—50mA AC/DC type.

2nd and Subsequent Letters (Type Classification)

A—Single diode.
B—Double diode.
C—Triodes except output triodes.
D—Output triode.
E—Tetrode.
F—Pentodes except output pentodes.
H—Hexode or heptode.
K—Octode.
L—Output pentode.
M—Tuning indicator.
P—Secondary emission valve.
W—Half wave gas-filled rectifier.
X—Full wave gas-filled rectifier.
Y—Half wave high-vacuum rectifier.
Z—Full wave high-vacuum rectifier.

Number Sequence

1–10—Pinch type construction valves fitted with European 5-pin (V base) or 8-pin (P base) side contact bases or International octal bases with European basing connection sequence.

11–19—European type metal valves and glass valves fitted with European metal bases.

20–29—All-glass valves fitted with 8-pin Loktal type American bases.

30–39—Pinch type construction valves fitted with International octal bases with American basing connection sequence.

40–49—All-glass miniature valves fitted with 8-pin Rimlock base.

50–59—Special construction types fitted with bases applicable to design features used.

60–64—All-glass valves fitted with 9-pin base.

65–79—Sub-miniature all-glass valves with or without bases.

80–89—All-glass miniature valves fitted with 9-pin American "Noval" type base.

90–99—All-glass miniature valves fitted with 7-pin American "Button" type base.

Exceptions to Above

(a) DAC21, DF21, DF22, DK21, DL21, DLL21 are of pinch type construction fitted with International octal bases with European base connection sequence.

(b) ECH3G, ECH4G, EK2G, EK2G/GT, EL3G, EL3NG, KF3G, KK2G, KL4G are of pinch type construction fitted with International octal bases with American base connection sequence.

(c) KK2 (Cap E) is of pinch type construction fitted with a medium 7-pin American base.

(d) EBF2G, EBF2GT/G, EBF35 are of pinch type construction fitted with International octal bases with European base connection sequence.

3. AMERICAN SERIES—OLDER SYSTEM

The first system used in America after some degree of type numbering standardisation was achieved consisted of a two-letter prefix indicative of the base, followed by a three-figured number, the first figure of which supposedly indicated the valve manufacturer and the last two figures the type identifiation (e.g. UX280). With the establishment of additional manufacturers, this system was discarded and a two-figure number system established. Although some attempt was made initially to classify types into numerical sequences (e.g. Rectifiers 80, 81, 82, 83, 84), the introduction of many new types rendered this impossible and the type number in the majority of cases gave no indication of the valve type or purpose.

4. AMERICAN SERIES—PRESENT SYSTEM

The present system consists of a number sequence followed by either one or two capital letters and a further number, and, in some cases, a letter sequence suffix (e.g. 25L6GT).

The first number sequence is indicative of the filament or heater voltage. The first letter sequence is purely individual type identification without reference to classification. The second number represents the number of effective electrodes to which external connection is possible. The letter sequence suffix is indicative of type of construction. The following tables gives the key to this system.

1st Figure Sequence

0—Cold cathode types.

1—1.4V. and 2V. battery types.

2—2.5V. AC types.

3—2.8V. battery types (centre tapped filament for either 1.4V. or 2.8V. operation).

5—5V. AC types.

6—6.3V. AC types.

7—7.0V. AC types (All-glass, Loktal base), nominal operating heater voltage 6.3V.

12—12.6V. AC/DC types (in some cases centre tapped heaters for either 6.3V. or 12.6V. operation).

14—14.0V. AC/DC types (All-glass, Loktal base), nominal operating heater voltage 12.6V.

15 and above—Heater voltage to nearest indicated volt.

1st Letter Sequence

Type identification without reference to application except that in the case of two-letter sequences commencing with the letter "S" a single-ended construction is indicated (e.g. 6SK7GT).

2nd Letter Sequence

Indicates the number of effective electrodes to which external connection can be made. Internally-connected electrodes are disregarded.

N.B.—There have been many exceptions to this system in the past.

2nd Figure Sequence

The use of a suffix has developed generally as a result of the adaptation of an existing type to a different construction. The most common suffixes are "G," "GT/G," "G/GT," and "GT."

The suffix "G" was originally intended to denote a valve in a conventional dome-shaped glass bulb construction which was an electrical counterpart of an existing type in a metal construction (e.g. 6A8—6A8G). Later it was used to indicate any valve in either a dome-shaped or tubular glass bulb fitted with a small or medium shell octal base (e.g. 1A7G, 6U7G).

The suffixes "GT/G" and "G/GT" are synonymous and were introduced to indicate a valve electrically identical with a type bearing the "G" suffix, but in a tubular bulb fitted with either an intermediate shell or a metal sleeve small wafer octal base (e.g. 6A8GT/G). The use of these bases gives an overall reduction in height due to the bulb being seated within the base, instead of on top of the base, as in the "G" construction.

The composite suffixes "GT/G" and G/GT" have now been superseded by the "GT" suffix, which is applied to any valve in a tubular glass bulb fitted with either an intermediate shell or metal sleeve small wafer type octal base (e.g. 6V6GT, 1B3GT).

Other suffixes used either alternatively or additionally are as follows:—

A, H, P, T, V—Indicates a minor structural or electrical change.

L—Indicates a semi-ruggedised version of an existing type.

MG—Indicates a combined metal-glass construction.

S—Indicates a metal sprayed valve, with the exception of type 6B7S which indicates a remote cut off version of type 6B7.

W—Indicates a ruggedised version of an existing type.

X—Indicates the use of a ceramic base.

Y—Indicates the use of a low loss phenolic base.

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
00A	**DETECTOR TRIODE**	Detector	F	5·0	0·25	45	1·5	0	—	—	666	20	0·03
01A	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier	F	5·0	0·25	90	2·5	−4·5			725	8	0·011
						135	3·0	−9·0			800	8	0·010
0A2	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	150	5·0 to 30·0	—	—		—	—	—
0A3 / VR75	**VOLTAGE REGULATOR**	Voltage Regulator	COLD			75	5·0 to 40·0	—	—	—	—	—	—
0A4G	**GAS TRIODE**	Relay Tube	COLD			Supply 105 to 130 R.M.S.	D.C. Cathode Current 25·0 mA.			—	—	—	—
0B2	**VOLTAGE REGULATOR**	Voltage Regulator	COLD			108	5·0 to 30·0	—		—	—	—	—
0C3 / VR105	**VOLTAGE REGULATOR**	Voltage Regulator	COLD			105	5·0 to 40·0						
0D3 / VR150	**VOLTAGE REGULATOR**	Voltage Regulator	COLD			150	5·0 to 40·0						
0E3	**VOLTAGE REFERENCE**	Voltage Reference	COLD			85	1·0 to 8·0	—				—	—
0Y4	**HALF-WAVE GAS-FILLED RECTIFIER**	Half-wave Rectifier	IONIC			117	D.C. Output 50·0				—	—	—
0Z4 0Z4G	**FULL-WAVE GAS-FILLED RECTIFIER**	Full-wave Rectifier	COLD			1000 peak max. plate to plate	D.C. Output 75·0 max. 30·0 min.		—	—			
1A3	**H.F. DIODE**	Detector Rectifier	H	1·4	0·15	R.M.S. 117	D.C. Output 0·5 max.	—			—		

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
	—	8·5	Grid Leak 2 megohms returned to pin 4.	8	F+	A	G	F−	—	—	—	—	—	—	—	**00A**
	—	8·1		8	F+	A	G	F−	—	—	—	—	—	—	—	**01A**
		—	Starting Voltage = 155 Volts D.C.	21	A	K	IC	K	A	IC	K	—	—	—	—	**0A2**
	—	—	Starting Voltage = 100 Volts D.C.	30	NC	K	J	—	A	—	J	NC	—	—	—	**0A3 / VR75**
	—	—	Starter Anode Peak Voltage = 70 Volts. Cathode Peak Current 100 mA.	30	NC	K	NC	—	A	—	A_g	NC	—	—	—	**0A4G**
	—	—	Starting Voltage = 115 Volts D.C.	21	A	K	IC	K	A	IC	K	—	—	—	—	**0B2**
	—	—	Starting Voltage = 135 Volts D.C.	30	NC	K	J	—	A	—	J	NC	—	—	—	**0C3 / VR105**
—	—	—	Starting Voltage = 180 Volts D.C.	30	NC	K	J	—	A	—	J	NC	—	—	—	**0D3 / VR150**
—	—	—	Min. and max. operating plate voltages = 83 V. and 87 V. respectively. Quiescent current = 4 mA. Starting voltage = 125 V. D.C. A.C. Resistance = 430 Ω.	30	NC	A	NC	K	NC	NC	NC	K	—	—	—	**0E3**
—	—	—	Condenser Input to Filter. Starter Electrode (100 V.) connected to Anode through a 10 Meg. resistor bypassed with a 0·002 μF capacitor. Min. Series Anode Resistance 50Ω.	30	S	—	A_g	—	A	—	K	K	—		—	**0Y4**
—	—	—	Starting supply voltage per plate = 300 min. peak. Tube drop 24 volts. D.C. output 300 volts max.	30 30	S NC	NC —	A_2 A_2	— —	A_1 A_1	— —	NC NC	K K	— —	— —	— —	**0Z4** **0Z4G**
	—	—	Condenser input to Filter 2μF.	21	H	A	K	NC	IC	A	H	—	—	—	—	**1A3**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
1A4	**REMOTE CUT-OFF R.F. TETRODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	—	★
1A4P	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	—	★
1A4T	**REMOTE CUT-OFF R.F. TETRODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	—	★
1A5G	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·05	85	3·5	−4·5	85	0·7	800	—	0·3
1A5GT						90	4·0	−4·5	90	0·8	850	—	0·3
1A6	**PENTAGRID**	Frequency Converter	F	2·0	0·06	★	★	★	★	★	★	—	★
1A7G	**PENTAGRID**	Frequency Converter	F	1·4	0·05	90	0·6	(G_1) 0	(G_{2+5}) 45	0·7	Conv. 250	—	0·6
1A7GT													
1AB6	**HEPTODE**	Frequency Converter	F	1·4	0·025	65	0·7	(G_3) 0	(G_4) 65	0·15	Conv. 300	—	1·0
1AC5	**POWER OUTPUT PENTODE**	Class A Power Amplifier	F	1·25	0·04	67·5 45·0 30·0	2·0 1·0 0·5	−4·5 −3·0 −2·0	67·5 45·0 30·0	0·4 0·2 0·1	750 600 450	— — —	0·15 0·17 0·2
1AC6	**HEPTODE**	Frequency Converter	F	1·4 for para. fils.	0·05	85*	0·65	(G_3) 0	(G_4)* 60	0·14	Conv. 325	—	1·0
				1·35 for series fils.		63·5†	0·70	(G_3) 0	(G_4)† 63·5	0·15	Conv. 300	—	0·9

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
	—	—	★ *For data and notes refer type* ID5GT.	8	F	A	G_2	F	—	—	—	—	—	G_1	—	**IA4**
	—	0·007	★ *For data and notes refer type* ID5GP.	8	F+	A	G_2	F−	—	—	—	—	—	G_1	—	**IA4P**
	—	—	★ *For data and notes refer type* ID5GT.	8	F	A	G_2	F	—	—	—	—	—	G_1	—	**IA4T**
25000	0·1	—	Total Harmonic Distrotion 10%.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**IA5G**
25000	0·115		Total Harmonic Distortion 7%.													**IA5GT**
	—	0·25	★ *For data and notes refer type* **ID7G.**	17	F+	A	G_2	G_1	G_3 G_5	F−	—	—	—	G_4	—	**IA6**
	—	0·5	Conversion Conductance = 5 μmhos at − 3 volts grid (G_4) bias. Grid No.2 90 volts at 1·2 mA. Osc. Grid (G_1) Resistor 0·2 meg. Osc. Grid Current 0·035 mA. Osc. Gm = 600 μmhos.	30	S	F+	A	G_3 G_5	G_1	G_2	F−	NC	—	G_4	—	**IA7G** **IA7GT**
	—	—	Grid No.2 35 V. at 1·65 mA. Osc. Grid (G_1) Resistor 27,000 Ω. Osc. Grid (G_1) voltage = 3 V. R.M.S.	21	F−	A	G_2	G_1	G_4	G_3	F+ G_5		—	—	—	**1AB6**
25000	0·05	—	Total Harmonic Distortion 10% in each case.	31	NC	G_1	NC	F− G_3	F+	NC	A	G_2	—	—	—	**IAC5**
40000	0·015															
50000	0·005															
		0·11	* Based on supply voltage = 90 V., less bias on output valve. Series screen (G_4) resistor 0·18 meg. Grid 2 voltage = 30 V. (1·65 mA through 33,000 Ω from 90 V. supply). Osc. Grid (G_1) resistor 27,000 Ω returned to F+. Osc. Grid Current 0·13 mA. Conversion Conductance 3·25 μmhos at − 6 V. grid (G_3) bias. † Based on supply voltage = 67·5 V., less bias on output valve. Grid 2 voltage = 30 V. (1·55 mA through 22,000 Ω from 67·5 V. supply). Osc. Grid (G_1) Resistor 27,000 Ω returned to F+. Osc. Grid Current 0·13 mA. Conversion Conductance = 3·0 μmhos at − 4 V. grid (G_3) bias.	21	F−	A	G_2	G_1	G_4	G_3	F+ G_5	—	—	—	—	**1AC6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
1AD5	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·25	0·04	67·5	1·85	−6	67·5	0·75	735	—	0·7
1AH5	**DIODE R.F. PENTODE**	Detector, R.F. Amplifier	F	1·4	0·025	90	1·1	0	90	0·4	400	—	1·6
1B3GT / 8016	**HALF-WAVE VACUUM RECTIFIER**	Rectifier	F	1·25	0·2	Peak Inverse 30000	Peak 17·0 Average 2·0	—	—	—	—	—	—
1B4	**SHARP CUT-OFF R.F. TETRODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	★	—
1B4P	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	—	★
1B4T	**SHARP CUT-OFF R.F. TETRODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	★	—
1B5 / 258	**DUO-DIODE TRIODE**	Detector, A.F. Amplifier	F	2·0	0·06	135	0·8	−3	—	—	575	20	0·035
1C4	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·12	★	★	★	★	★	★	—	★
1C5G	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·1	83	7·0	−7	83	1·6	1500	—	0·110
1C5GT						90	7·5	−7·5	90	1·6	1550	—	0·115
1C6	**PENTAGRID**	Frequency Converter	F	2·0	0·12	★	★	★	★	★	★	—	★
1C7G	**PENTAGRID**	Frequency Converter	F	2·0	0·12	135	1·3	−3 (G_4)	67·5 (G_{3+5})	2·5	300 Conv.	—	0·6
						180	1·5	−3	67·5	2·0	325	—	0·7
1D4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·24	★	★	★	★	★	★	—	★
1D5G	**REMOTE CUT-OFF R.F. TETRODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	—	★
1D5GP	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·06	90	2·2	−3	67·5	0·9	720	—	0·6
						180	2·3	−3	67·5	0·8	750	—	1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
		0·01	Plate Current = 10 μA for − 6 volts grid bias.	31	NC	G_1	NC	F− G_3	F+	NC	A	G_2	—	—	—	**1AD5**
				21	F− G_3	NC	D	G_2	A	G_1	F+	—	—	—	—	**1AH**
	—	—	Pins 1, 3, 5, and 8 may be connected to pin 7, otherwise do not use.	30	IC	F	IC	—	IC	—	F IS	IC	—	A	—	**1B3GT / 8016**
	—	—	★ *For data and notes refer type* 1E5GT.	8	F	A	G_2	F	—	—	—	—	—	G_1	—	**1B4**
	—	0·007	★ *For data and notes refer type* 1E5GP.	8	F+	A	G_2	F−	—	—	—	—	—	G_1	—	**1B4P**
	—	—	★ *For data and notes refer type* 1E5GT.	8	F	A	G_2	F	—	—	—	—	—	G_1	—	**1B4T**
	—	3·6	Diode No. 1 Detection. Diode No. 2 A.V.C.	17	F+	A	D_2	D_1	G_1	F−	—	—	—	—	—	**1B5 / 25S**
	—	0·01	★ *For data and notes refer type* 1M5G.	8	F+	A	G_2	F− G_3	—	—	—	—	—	G_1	—	**1C4**
9000	0·2		Total Harmonic Distortion 10% in each case.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**1C5G**
8000	0·24															**1C5GT**
	—	0·3	★ *For data and notes refer type* 1C7G.	17	F+	A	G_2	G_1	G_3 G_5	F−	—	—	—	G_4	—	**1C6**
	— —	0·26	Conversion Conductance = 4 μmhos at − 14 volts grid (G_4) bias. Grid No. 2 supply 180 V. (4·0 mA) through 20000Ω. Osc. Grid (G_1) Resistor 50000Ω. Osc. Grid Current 0·2 mA. Osc. Gm = 1000 μmhos.	30	NC	F+	A	G_2 G_4	G_1	G_2	F−	NC	—	G_4	—	**1C7G**
★	★	1·0	★ *For data and notes refer type* 1L5G.	15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	**1D4**
	—	—	★ *For data and notes refer type* 1D5GT.	30	NC	F+	A	G_2	NC	—	F−	NC	—	G_1	—	**1D5G**
	— —	0·007	Mutual Conductance = 15 μmhos at − 15 volts grid bias.	30	NC	F+	A	G_2	NC	—	F−	NC	—	G_1	—	**1D5GP**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
ID5GT	REMOTE CUT-OFF R.F. TETRODE	R.F. Amplifier	F	2·0	0·06	135 180	2·2 2·2	−3 −3	67·5 67·5	0·7 0·7	625 650	— —	0·35 0·6
ID6	HALF-WAVE VACUUM RECTIFIER	Half-Wave Rectifier	H	25·0	0·3	R.M.S. 250 Max.	D.C. Output 100·0 Max.	—	—	—	—	—	—
ID7G	PENTAGRID	Frequency Converter	F	2·0	0·06	135 180	1·2 1·3	−3 (G_1) −3	67·5 (G_{2+5}) 67·5	2·5 2·4	275 Conv. 300	— —	0·4 0·5
ID8GT	DIODE TRIODE POWER OUTPUT PENTODE	Detector, A.F. Amplifier, Power Amplifier	F	1·4	0·1	90 90	1·1 5·0	0 −9	— 90	— 1·0	575 925	25 —	0·0435 0·2
1E3	AMPLIFIER TRIODE	U.H.F. Amplifier	F	1·25	0·2	150	20	−3·5			3500	14	—
IE5G	SHARP CUT-OFF R.F. TETRODE	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	★	—
IE5GP	SHARP CUT-OFF R.F. PENTODE	R.F. Amplifier	F	2·0	0·06	90 180	1·6 1·7	−3 −3	67·5 67·5	0·7 0·6	600 650	— —	1·0 1·5
IE5GT	SHARP CUT-OFF R.F. TETRODE	R.F. Amplifier	F	2·0	0·06	180	1·7	−3	67·5	0·4	650	780	—
IE7G IE7GT	TWIN POWER PENTODE	Class "AB_1" Power Amplifier	F	2·0	0·24	135	7·0	−7·5	135	2·0	—	—	—
IE8	PENTAGRID	Frequency Converter	F	1·25	0·04	67·5	1·0	(G_3) 0	(G_{2+4}) 67·5 Supply See Note.	1·5	Conv. 150	—	0·4
1F3	TUNING INDICATOR	Tuning Indicator	F	1·4	0·025	90 See Note	See Note	See Note		—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
		0·01	Mutual Conductance = 15 μmhos at — 15 volts grid bias.	30	NC	F+	A	G_2	NC	—	F—	NC	—	G_1		**ID5GT**
		—	Condenser Input to Filter 16μF. max. Plate Supply Impedance = 50Ω min.	17	H	A	NC	K	A	H	—	—	—	—		**ID6**
	—	0·25	Conversion Conductance = 4 μmhos at — 22·5 volts grid bias. Grid No. 2 supply 180 V. (2·3 mA) through 20,000 Ω. Osc. Grid (G_1) Resistor 50,000Ω. Osc. Grid Current 0·2 mA. Osc. Gm = 425 μmhos.	30	NC	F+	A	G_3 G_5	G_1	G_2	F—	NC	—	G_4	—	**ID7G**
12000	0·2	— —	Triode Unit. Pentode Unit.	30	NC	F+	A^D	$G_2{}^D$	$G_1{}^D$	A^I	F—	D		$G_1{}^I$		**ID8GT**
	See Note	1·5	Power output = 0·45 W. at 470 Mc/s. Pin No. 3 to be used for R.F. return to filament circuit.	32	G_1	NC	F	F+	F—	NC	NC	A	NC	—		**1E3**
	—	—	★ *For data and notes refer type* IE5GT.	30	NC	F	A	G_2	NC	—	F	—	—	G_1	—	**IE5G**
	— —	0·007	Plate Current Cut-off at —8 volts grid bias.	30	NC	F+	A	G_2	NC	—	F	NC	—	G_1	—	**IE5GP**
	—	—	Plate Current Cut-off at — 8 volts grid bias.	30	NC	F	A	G_2	NC	—	F	—	—	G_1	—	**IE5GT**
Plate to Plate 24000	0·575	—	Push-Pull Class AB_1. Values are for both units.	30	NC	F+	A^{II}	$G_1{}^{II}$	$G_1{}^I$	A^I	F G_3	G_2	—	—	—	**IE7G** **IE7GT**
	—	0·4	Conversion Conductance = 5 μmhos at — 9 volts grid (G_3) bias. Series Screen Resistor 0·02 meg. Osc. Grid (G_1) Resistor 0·1 meg. Osc. Grid Current 0·07 mA.	31	IC	G_1	NC	F G_5	F+	A	G_2 G_4	G_3		—		**IE8**
	—	—	Min. plate voltage for uniform illumination = 60 V. Grid voltage for extinction —10 V. Grid voltage for max. light 0 V. Plate current at zero grid voltage = 0·1 mA.	31	NC	NC	A	F	F	G	NC	NC	—	—	—	**1F3**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
IF4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·12	★	★	★	★	★	★	—	★
IF5G	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·12	90 135	4·0 8·0	−3 −4·5*	90 135	1·1 2·4	1400 1700	— —	0·24 0·2
IF6	**DUO DIODE PENTODE**	Detector R.F. and A.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	—	★
IF7G **IF7GH** **IF7GV**	**DUO DIODE PENTODE**	Detector R.F. and A.F. Amplifier	F	2·0	0·06	180	2·2	−1·5	67·5	0·7	650	—	1·0
IG4G **IG4GT** **IG4GT/G**	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier	F	1·4	0·05	90	2·3	−6	—	—	825	8·8	0·0107
IG5G	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·12	90 135	8·5 8·7	−6 −13·5	90 135	2·5 2·5	1500 1550	— —	0·133 0·160
IG6G **IG6GT** **IG6GT/G**	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	F	1·4	0·1	90	Zero Signal 2·0 Max. Signal 11·0	0	—	—	—	—	—
IH4G	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier	F	2·0	0·06	135	3·0	−9	—	—	900	9·3	0·0103
		Class "B" Power Amplifier				157·5	Zero Signal 1·0 Peak 50·0 Max.	−15	—	—	—	—	—
IH5G **IH5GT** **IH5GT/G**	**DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	F	1·4	0·05	90	0·15	0	—	—	275	65	0·24
IH6G	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	F	2·0	0·06	135	0·8	−3	—	—	575	20	0·035
IJ6G **IJ6GT**	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	F	2·0	0·24	135	Zero Signal 10·0 Max. Signal 30·0	0	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
★	★	—	★ *For data and notes refer type* IF5G.	15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	**IF4**
20000	0·11	—	Harmonic Distortion 6%.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**IF5G**
10000	0·31		Harmonic Distortion 5%.													
	—	0·007	★ *For data and notes refer type* IF7G.	17	F+	A	G_2	D_2	D_1	F−	—	—	—	G_1	—	**IF6**
	—	0·01	As R.C. Amplifier (135 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Screen Resistor 1·0 meg. Grid Bias — 1 volt. Gain = 48.	30	NC	F+	A	D_2	D_1	G_2	F−	NC	—	G_1	—	**IF7G** **IF7GH** **IF7GV**
		2·8		30	NC	F+	A	NC	G_1	—	F−	NC	—	—	—	**IG4G** **IG4GT** **IG4GT/G**
8500	0·25	—	Total Harmonic Distortion 6%.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**IG5G**
9000	0·55		Total Harmonic Distortion 7%.													
12000 plate to plate	0·35	—	Values are for the two units. Effective Grid Circuit Impedance per unit 2530 Ω at 400 cycles. Peak A.F. Grid to Grid volts = 48. Peak Grid Current per unit 6·0 mA.	30	NC	F+	A^{II}	G_1^{II}	G_1^{I}	A^{I}	F−	NC	—	—	—	**IG6G** **IG6GT** **IG6GT/G**
	—	5·5	D.C. Resistance in the grid circuit should not exceed 2·0 megohms.	30	NC	F+	A	NC	G_1	—	F−	NC	—	—	—	**IH4G**
Plate to Plate 8000	2·1		Maximum Signal Driving Power 260 mW.													
	—	1·0		30	S	F+	A	NC	D	—	F− S_d	NC	—	G_1	—	**IH5G** **IH5GT** **IH5GT/G**
		3·6	Diode No. 1 Detection. Diode No. 2 A.V.C.	30	NC	F+	A	D_2	D_1	G_1	F−	NC	—	—	—	**IH6G**
Plate to Plate 10000	2·2	—	R.M.S. A.F. Grid to Grid Voltage = 50 volts. Effective Grid Circuit Impedance per unit 1300 Ω. Driving Power 170 mW. Total Distortion 10%. Values are for two units.	30	NC	F+	A^{II}	G_1^{II}	G_1^{I}	A^{I}	F−	NC	—	—	—	**IJ6G** **IJ6GT**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
1K4	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	F	2·0	0·12	★	★	★	★	★	★	-	★
1K5G	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	F	2·0	0·12	135	2·5	0	67·5	0·93	1050	—	1·0
1K6	**DUO-DIODE SHARP CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	F	2·0	0·12	★	★	★	★	★	★	—	★
1K7G	**DUO-DIODE SHARP CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	F	2·0	0·12	135 135	0·9 1·8	−3 0	90 67·5	0·35 0·7	600 800	— —	2·0 1·25
1L4	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	F	1·4	0·05	90 90	2·9 4·5	0 0	67·5 90	1·2 2·0	925 1025	— —	0·6 0·35
1L5G	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·24	135 180	6·0 9·5	−4·5 −6	135 180	1·5 2·3	2150 2400	— —	0·15 0·137
1LA4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·05	90	4·0	−4·5	90	0·8	850	—	0·3
1LA6	**PENTAGRID**	Frequency Converter	F	1·4	0·05	90	0·55	(G_4) 0	(G_{2+5}) 45	0·6	Conv. 250	—	0·75

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
	—	0·01	★ *For data and notes refer type* IK5G.	8	F+	A	G_2	F−	—	—	—	—	—	G_1	—	**IK4**
	—	0·01	Plate Current Cut-off at − 6 V. grid bias. As R.C. Amplifier (135 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Screen Resistor 0·75 meg. Grid Bias − 1·5 V. Gain = 75. As Triode Amplifier (Screen tied to plate). Plate 180 V. at 5·9 mA. Bias − 6·0 V. Load = 10,000Ω. Power Output = 100 mW at 5% Distortion.	30	NC	F+	A	G_2	NC	—	F−	NC	—	G_1	—	**IK5G**
	—	0·015	★ *For data and notes refer type* IK7G.	17	F+	A	D_2	D_1	G_2	F−	—	—	—	G_1	—	**IK6**
	— —	0·015	Plate Current Cut-off at − 6·5 V. and − 4·0 V. grid bias respectively. As R.C. Amplifier (135 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Screen Resistor 1·0 meg. Grid Bias − 1·5 V. Gain = 76. As Triode Amplifier (Screen tied to plate). Plate 180 V. at 3·5 mA. Bias − 6·0 V. Load = 40,000Ω. Power Output = 60 mW at 5% Distortion.	30	NC	F+	A	D_2	D_1	G_2	F−	NC	—	G_1	—	**IK7G**
	— —	0·008	Plate Current = 10 μA for − 6 V. and − 8 V. grid bias respectively. As R.C. Amplifier (135 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 1·0 meg. Screen Resistor 2·1 meg. Gain = 53.	21	F− IS	A	G_2	NC	F− IS	G_1	F+	—	—	—	—	**IL4**
15000 15000	0·35 0·75	1·0	Total Harmonic Distortion 10%. Total Harmonic Distortion 8%.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**IL5G**
25000	0·15	—	Total Harmonic Distortion 7%.	29	F+	A	G_2	NC	NC	G_1	NC	F−	—	—	S	**ILA4**
	—	0·4	Conversion Conductance = 10 μmhos at − 3 volts grid (G_3) bias. Grid No.2 90 V. at 1·2 mA. Osc. Grid (G_1) Resistor 0·2 meg. Osc. Grid Current 0·035 mA. Osc. Gm = 550 μmhos.	29	F+	A	G_2	G_1	G_3 G_5	G_4	NC	F−	—	—	S	**ILA6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage	Current	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
1LB4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·05	90	5·0	−9	90	1·0	925	—	0·2
1LC5	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90	1·15	0	45	0·3	775	—	1·5
1LC6	**PENTAGRID**	Frequency Converter	F	1·4	0·05	90	0·75	(G_1) 0	(G_{2+5}) 35	0·7	Conv. 275	—	0·65
1LD5	**DIODE SHARP CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	F	1·4	0·05	90	0·6	0	45	0·1	575	—	0·75
1LE3	**AMPLIFIER TRIODE**	A.F. Amplifier	F	1·4	0·05	90 90	1·4 4·5	−3 0	— —	— —	760 1300	14·5 14·5	— —
1LQ5	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90 90	3·7 1·7	−1·5 0	90 45	0·9 0·4	1150 800	— —	0·5 1·0
1LH4	**DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	F	1·4	0·05	90	0·15	0	—	—	275	65	0·24
1LN5	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90	1·6	0	90	0·35	800	—	1·1
1M5G	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·12	135	2·5	0	67·5	0·9	1000	—	0·8
1N5G **1N5GT** **1N5GT/G**	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90	1·2	0	90	0·3	750	—	1·5
1P5G **1P5GT** **1P5GT/G**	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90	2·3	0	90	0·7	750	—	0·8
1Q5G **1Q5GT** **1Q5GT/G**	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	F	1·4	0·1	90 85	9·5 7·0	−4·5 −5·0	90 85	1·3 0·8	2200 1950	— —	0·075 0·07
1R5	**PENTAGRID**	Frequency Converter	F	1·4	0·05	90 67·5	1·6 1·4	0 (G_3) 0	67·5 (G_{3+4}) 67·5	3·2 3·2	300 Conv. 280	— —	0·6 0·5

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
12000	0·2	—	Total Harmonic Distortion 10%.	29	F+	A	G_2	IC	NC	G_1	NC	F— G_3	—	—	S	**ILB4**
	—	0·007	Plate Current = 20 μA at — 2·5 volts grid bias.	29	F+	A	G_2	G_3	F— IS	G_1	NC	F IS	—	—	S	**ILC5**
	—	0·28	Conversion Conductance = 5 μmhos at — 3 volts grid (G_4) bias. Grid No.2 45 V. at 1·4 mA. Osc. Grid (G_1) Resistor 0·2 meg. Osc. Grid Current 0·035 mA. Osc. G_m = 550 μmhos.	29	F+	A	G_2	G_1	G_3 G_5	G_4	NC	F—	—	—	S	**ILC6**
	—	0·18	Plate Current Cut-off at 2·5 V. grid bias.	29	F+	A	G_2	D	NC	G_1	NC	F— G_3	—	—	S	**ILD5**
	— —	1·7		29	F+	A	NC	NC	IC	G_1	NC	F—	—	—	S	**ILE3**
	— —	0·007	Mutual Conductance = 10 μmhos at — 19 volts bias. Mutual Conductance = 10 μmhos at — 10 volts bias.	29	F+	A	G_2	G_3	F— IS	G_1	NC	F— IS	—	—	S	**ILG5**
	—			29	F+	A	NC	D	NC	G_1	NC	F—	—	—	S	**ILH4**
	—	0·007	Plate Current Cut-off at — 4·5 volts bias.	29	F+	A	G_2	G_3	F—	G_1	NC	F—	—	—	S	**ILN5**
	—	0·01	Mutual Conductance = 4 μmhos at — 16 volts bias.	30	NC	F+	A	G_2	NC	—	F—	NC	—	G_1	—	**IM5G**
	—	0·007	Mutual Conductance = 5 μmhos at — 4 volts bias.	30	S	F+	A	G_2	NC	—	F—	NC		G_1	—	**IN5G IN5GT IN5GT/G**
		0·007	Mutual Conductance = 10 μmhos at — 12 volts bias.	30	S	F+	A	G_2	NC	—	F—	NC	—	G_1	—	**IP5G IP5GT IP5GT/G**
8000 9000	0·27 0·25	—	Total Harmonic Distortion 6%. Total Harmonic Distortion 5·5%	30	NC	F+	A	G_2	G_1	—	F—	NC	—	—	—	**IQ5G IQ5GT IQ5GT/G**
	—	0·4	Conversion Conductance = 5 μmhos at — 14 volts grid (G_2) bias. Osc. Grid (G_1) Current 0·25 mA. Osc. Grid Resistor 0·1 meg. Total Cathode Current 5·0 mA.	21	F—	A	G_2 G_4	G_1	F—	G_3	F+	—	—	—	—	**IR5**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage	Current	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
I84	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·1	90 67·5 45	7·4 7·2 3·8	−7 −7 −4·5	67·5 67·5 45	1·4 1·5 0·8	1575 1550 1250	— — —	0·1 0·1 0·1
I85	**DIODE SHARP CUT-OFF PENTODE**	Detector A.F. Amplifier	F	1·4	0·05	45 67·5	1·2 1·6	0 0	45 67·5	0·3 0·4	525 625	— —	0·5 0·6
IT4	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90 67·5	3·5 3·4	0 0	67·5 67·5	1·4 1·5	900 875	— —	0·5 0·25
IT5GT	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	F	1·4	0·05	90	6·5	−6	90	0·8	1150	—	—
IT6	**DIODE SHARP CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	F	1·25	0·04	67·5	1·6	0	67·5	0·4	600	—	0·4
IU4	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90	1·6	0	90	0·45	900	—	1·5
IU5	**DIODE SHARP CUT-OFF PENTODE**	Detector A.F. Amplifier	F	1·4	0·05	★	★	★	★	★	★	—	★
IV	**HALF-WAVE VACUUM RECTIFIER**	Half-Wave Rectifier	H	6·3	0·3	Max. R.M.S. 325	D.C. Output 45	—	—	—	—	—	—
IV2	**HALF-WAVE VACUUM RECTIFIER**	Half-Wave Rectifier	F	0·625	0·3	Peak Inverse 7500	Peak 10·0 Average 0·5	—	—	—	—	—	—
2A3	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	2·5	2·5	250	60·0	−4·5	–	—	5250	4·2	800 Ohms.
		Class "AB_1" Power Amplifier				300	Zero Signal 80·0 Max. Signal 100·0	See Note	—	—		—	
2A5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	2·5	1·75	★	★	★	★	★	★	–	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.C.	TYPE No.
8000 5000 8000	0·27 0·18 0·065	—	Total Distortion 12%. Total Distortion 10%. Total Distortion 12%.	21	F−	A	G_1	G_2	F−	A	F+	—	—	—	—	**1A4**
	— —	—	Mutual Conductance = 10 μmhos at − 5 volts grid bias. As R.C. Amplifier (135 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 1·0 meg. Screen Resistor 3·1 meg. Grid Leak 10·0 meg. Gain = 56.	21	F− G_3	NC	D	G_2	A	G_1	F+	—	—	—	—	**1A5**
	— —	0·01	Mutual Conductance = 10 μmhos at − 16 volts bias.	21	F−	A	G_2	NC	F−	G_1	F+	—	—	—	—	**1T4**
14000	0·17	—	Total Distortion 7·5%.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**1T5GT**
	—	—	Mutual Conductance = 25 μmhos at − 5 volts grid bias.	31	A	NC	G_1	F− G_3	F+	D	NC	G_2	—	—	—	**1T6**
—	—	0·008	Mutual Conductance = 10 μmhos at − 4·5 volts bias.	21	F− G_3 IS	A	G_2	NC	F− G_3 IS	G_1	F+	—	—	—	—	**1U4**
—		—	★ *For data and notes refer type* 1S5.	21	F− G_3	A	G_2	D	NC	G_1	F+	—	—	—	—	**1U5**
—	—	—	With less than 40 μF condenser input to filter, minimum plate supply impedance = 75 Ω min. Greater supply impedances required for larger input capacities.	8	H	A	K	H	—	—	—	—	—	—	—	**1V**
—	—	—		32	IC	IC	IC	F	F	IC	IC	IC	A	—	—	**1V2**
2500	3·5	16·5	Second Harmonic Distortion 5%. For Self-biased Operation the Cathode Bias Resistor should be 750 Ω.	8	F	A	G_1	F	—	—	—	—	—	—	—	**2A3**
Plate Plate 5000	10·0		Values are for two tubes. Peak A.F. Grid to Grid voltage = 156 volts. Cathode Bias Resistor 780 Ω. Total Harmonic Distortion 5%.													
★	★		★ *For data and notes refer type* 6F6G. *For replacement consider also type* 42.	17	H	A	G_2	G_1	K	H	—	—	—	—	—	**2A5**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
2A6	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	2·5	0·8	★	★	★	—	—	★	★	★
2A7	**PENTAGRID**	Frequency Converter	H	2·5	0·8	★	★	★	★	★	★	—	★
2B7	**DUO-DIODE MEDIUM CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	2·5	0·8	★	★	★	★	★	★	—	★
2D21	**GAS-FILLED TETRODE**	Thyratron	H	6·3	0·6	117 R.M.S. 400	— —	R.M.S. 5·0 — 6	0 0	— —	— —	— —	— —
2E5	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	2·5	0·8	★	★	★	—	—	—	—	—
2V3G	**HALF-WAVE VACUUM RECTIFIER**	Half-Wave Rectifier	F	2·5	5·0	Peak Inverse 16500	Peak 12·0 Average 2·0	—	—	—	—	—	—
2X2 / 879	**HALF-WAVE VACUUM RECTIFIER**	Half-Wave Rectifier	H	2·5	1·75	Peak Inverse 12500	Peak 60·0 Average 7·5	—	—	—	—	—	—
2X2A	**HALF-WAVE VACUUM RECTIFIER**	Half-Wave Rectifier	H	2·5	1·75	Peak Inverse 12500	Peak 60·0 Average 7·5	—	—	—	—	—	—
3A4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·8 1·4	0·1 0·2	150 135	13·3 14·8	−8·4 −7·5	90 90	2·2 2·6	1900 1900	— —	0·1 0·09
3A5	**H.F. TWIN TRIODE**	Class "C" R.F. Power Amplifier	F	2·8 1·4	0·11 0·22	135	30·0	−20	—	—	—	—	—
3A8GT	**DIODE TRIODE R.F. PENTODE**	Detector A.F. Amplifier, R.F. Amplifier	F	2·8 1·4	0·05 0·1	90 90	0·2 1·5	0 0	— 90	— 0·5	325 750	65 —	0·2 0·8

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
	—	1·7	★ *For data and notes refer type* 6SQ7GT. *For replacement consider also types* 6B6G *and* 75.	17	H	A	D_2	D_1	K	H	-	—	—	G_1	—	**2A6**
	—	0·3	★ *For data and notes refer type* 6A8. *For replacement consider also type* 6A7.	19	H	A	G_3 G_5	G_2	G_1	K	H	—	-	G_4	-	**2A7**
	—	0·007	★ *For data and notes refer type* 6B8G. *For replacement consider also type* 6B7.	19	H	A	G_2	D_2	D_1	K G_3	H	—	—	G_1	—	**2B7**
—	—	-	Minimum Anode Circuit Resistance 1200 Ω and 2000 Ω respectively. Cathode Current: Peak 0·5 A. max. Average 0·1 A. max.	21	G_1	K	H	H	G_2	A	G_2			—	—	**2D21**
	—	-	★ *For data and notes refer type* 6E5.	17	H	A	G_1[t]	T	K	H					—	**2E5**
—	—	-	*For use with Cathode Ray Tubes.*	30	NC	F	NC	—	NC	- -	F	NC	—	A	—	**2V3G**
	—		*Replace with* 2X2A.	8	H	NC	NC	H K				-		A		**2X2** / **879**
			For use with Cathode Ray Tubes. R.M.S. Plate Volts 4500.	8	H	NC	NC	H K	—	—	-	—	—	A	—	**2X2A**
8000 8000	0·7 0·6	0·34	Series Filaments between pins 1 and 7. Parallel Filaments between pin 5 and 1, 7 tied together.	21	F—	A	G_2	G_1	F_t	A	F +		-		-	**3A4**
	2·0	3·2	Peak R.F. Grid to Grid V. = 90. D.C. Grid Current 5·0 mA. Driving Power 0·2 watt. Values for both units in push-pull at 40 megacycles.	21	F—	A^{II}	G_1^{II}	F_t	G_1^{I}	A^{I}	F +	—	—	—	—	**3A5**
	-	2·0	Triode Unit.	30	F_t G_3^{p} IS	F+	A^{p}	G_2^{p}	G_1^{t}	A^{t}	F—	D		G_1^{p}	—	**3A8GT**
	—	0·012	Pentode Unit.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage	Current	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
3Q4	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	1·4 2·8	0·05 0·025	85	5·0	−5·2	85	1·0	1400	—	—
3LF4	BEAM POWER OUTPUT TETRODE	Class "A" Power Amplifier	F	2·8 1·4	0·05 0·1	★	★	★	★	★	★	—	★
3Q4	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	2·8 1·4	0·05 0·1	★	★	★	★	★	★	—	★
3Q5G 3Q5GT 3Q5GT/G	BEAM POWER OUTPUT TETRODE	Class "A" Power Amplifier	F	2·8	0·05	110 90	8·5 8·0	−6·6 −4·5	110 90	1·1 1·0	2000 2000	—	0·11 0·08
				1·4	0·1	110 90	10·0 9·5	−6·6 −4·5	110 90	1·4 1·3	2200 2200	—	0·1 0·09
3S4	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	2·8	0·05	67·5 90	6·0 6·1	−7·0 −7·0	67·5 67·5	1·2 1·1	1400 1425	—	0·1 0·1
				1·4	0·1	67·5 90	7·2 7·4	−7·0 −7·0	67·5 67·5	1·5 1·4	1550 1575	—	0·1 0·1
3V4	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	2·8	0·05	90	7·7	−4·5	90	1·7	2000		0·12
				1·4	0·1	85 90	6·9 9·5	−5·0 −4·5	85 90	1·5 2·1	1975 2150	— —	0·12 0·1
5AZ4	FULL-WAVE VACUUM RECTIFIER	Full-Wave Rectifier	F	5·0	2·0	R.M.S. 2 x 350	D.C. Output 125·0	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
14,000	0·2			21	F−	A	G_2	NC	F_t G_3	G_1	F+	—	—	—	—	**3C4**
★	★	—	★ *For data and notes, except filament base pin numbering, refer type* 3Q5GT.	29	F+	A	G_2	NC	NC	G_1	F_t G_3	F−	—	—	S	**3LF4**
★	★	—	★ *For data and notes refer type* 3V4.	21	F	A	G_1	G_2	F_t	A	F+	—	—	—	—	**3Q4**
8000	0·33	0·6	Filament Voltage applied across the two sections in series between pins 2 and 7. Grid Voltage referred to pin 7. Total Harmonic Distortion 8·5% in each case.	30	NC	F+	A	G_3	G_1	F−	F_t	—	—	—	—	**3Q5G**
8000	0·23															**3Q5GT**
8000	0·4		Filament Voltage applied across the two sections in parallel between pins 8 and 2, 7 tied together. Grid Voltage referred to pin 8. Total Harmonic Distortion 6% in each case.													**3Q5GT/G**
8000	0·27															
5000	0·16*	—	Filament Voltage applied across the two sections in series between pins 1 and 7. Grid Voltage referred to pin 1. *Total Harmonic Distort. 12%. †Total Harmonic Distort. 13%.	21	F−	A	G_1	G_3	F_t	A	F+	—	—	—	—	**3S4**
8000	0·235†															
5000	0·18*		Filament Voltage applied across the two sections in parallel between pin 5 and 1, 7 tied together. Grid Voltage referred to pin 5. *Total Harmonic Distort. 10%. †Total Harmonic Distort. 12%.													
8000	0·27†															
10000	0·24	0·2	Filament Voltage applied across the two sections in series between pins 1 and 7. Grid Voltage referred to pin 1. Total Harmonic Distortion 7%.	21	F−	A	G_2	NC	F_t	G_1	F+	—	—	—	—	**3V4**
10000	0·25*		Filament Voltage applied across the two sections in parallel between pin 5 and 1, 7 tied together. Grid Voltage referred to pin 5. *Total Harmonic Distort. 10%. †Total Harmonic Distortion 7%.						G_3							
10000	0·27†															
	—	—	With less than 40 μF. condenser input to filter, minimum plate supply impedance = 50 Ω per plate. Greater supply impedances required for larger input capacities.	29	NC	F	NC	A^I	NC	A^{II}	NC	F	—	—	S	**5AZ4**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
5R4GY	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	2·0	Max. R.M.S. 2 x 750	D.C. Output 250·0	—	—	—	—	—	—
5T4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	2·0	Max. R.M.S. 2 x 450	D.C. Output 225·0	—	—	—	—	—	—
5U4G	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	3·0	Max. R.M.S. 2 x 450	D.C. Output 225·0	—	—	—	—	—	—
5V4G	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	5·0	2·0	Max. R.M.S. 2 x 375	D.C. Output 175·0	—	—	—	—	—	—
5W4 **5W4G** **5W4GT** **5W4GT/G**	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	1·5	Max. R.M.S. 2 x 350	D.C. Output 100·0	—	—	—	—	—	—
5X4G	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	3·0	★	★	—	—	—	—	—	—
5Y3G **5Y3GT** **5Y3GT/G**	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	2·0	Max. R.M.S. 2 x 350	D.C. Output 125·0	—	—	—	—	—	—
5Y4G	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	2·0	★	★	—	—	—	—	—	—
5Z3	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	3·0	★	★	—	—	—	—	—	—
5Z4 **5Z4G** **5Z4GT** **5Z4GT/G**	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	5·0	2·0	Max. R.M.S. 2 x 350	D.C. Output 125·0	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate-capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
	–	—	Condenser Input to Filter = 4 μF.	30	NC	F	—	A"	—	A'	—	F	—	—	—	5R4GY
—	—	—	With less than 40 μF. condenser input to filter, minimum plate supply impedance = 150 Ω per plate. Greater supply impedances required for larger input capacities.	30	S	F	—	A"	—	A'	—	F	—	—	—	5T4
—	—	—	With less than 40 μF. condenser input to filter, minimum plate supply impedance = 75 Ω per plate. Greater supply impedances required for larger input capacities.	30	NC	F	—	A"	—	A'	—	F	—	-	—	5U4G
—	—	—	Condenser Input to Filter = 40 μF. Plate supply impedance per plate = 65 Ω min.	30	NC	H	—	A"	—	A'	—	H K	—	—	-	5V4G
—	—	—	With less than 4 μF. condenser input to filter, minimum plate supply impedance = 50 Ω per plate. Greater supply impedances required for larger input capacities.	30	S NC	F F	— —	A" A"	— —	A' A'	— —	F F	— —	— —	— —	5W4 5W4G 5W4GT 5W4GT/G
-	—	—	★ *For data and notes refer type* 5U4G.	30	NC	NC	A"	NC	A'	NC	F	F	—			5X4G
—	—	—	With less than 10 μF. condenser input to filter, minimum plate supply impedance = 50 Ω per plate. Greater supply impedances required for larger input capacities.	30	NC	F	—	A"	—	A'	—	F	—	—	—	5Y3G 5Y3GT 5Y3GT/G
—	—	—	★ *For data and notes refer type* 5Y3G.	30	NC	NC	A"	NC	A'	NC	F	F	—	—	—	5Y4G
–	—	—	★ *For data and notes refer type* 5U4G. *For replacement consider also type* 5X4G.	8	F	A'	A"	F	—	—	—	—	—	—	-	5Z3
-	-	-	With less than 40 μF. condenser input to filter, minimum plate supply impedance = 50 Ω per plate. Greater supply impedances required for larger input capacities.	30	S NC	H H	— —	A" A"	— —	A' A'	— —	H K H K	— —	— —		5Z4 5Z4G 5Z4GT 5Z4GT/G

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
6A3	POWER OUTPUT TRIODE	Class "A" Power Amplifier	F	6·3	1·0	Max. 250	60·0	−45	—	-	5250	4·2	800 Ohms.
		Class "AB_1" Power Amplifier				Max. 325	80·0 Zero Signal	See Note	-	-	—	—	
6A4	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	6·3	0·3	180	22·0	−12	180	3·9	2200		0·0455
6A6	TWIN POWER OUTPUT TRIODE	Class "B" Power Amplifier	H	6·3	0·8	★	★	★	—	—	—	—	—
6A7	PENTAGRID	Frequency Converter	H	6·3	0·3	★	★	★	★	★	★	—	★
6A8 6A8G 6A8GT	PENTAGRID	Frequency Converter	H	6·3	0·3	250	3·5	(G_4) −3	(G_{s+5}) 100	2·7	Conv. 550	—	0·36
6AB4	HIGH μ TRIODE	Grounded Grid or Grounded Cathode Amplifier	H	6·3	0·15	100	3·7	1			4000	54	0·0135
						180	11·0	−1	—	—	6600	62	0·0094
						250	10·0	−2	-		5500	55	0·01
6AB5 6AB5/ 6N5	TUNING INDICATOR WITH TRIODE	Tuning Indicator	H	6·3	0·15	★	★	★	—			—	—
6AB7 6AB7/ 1853	TELEVISION MEDIUM CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·45	300	12·5	−3	200	3·2	5000	—	0·7
6AB8	TRIODE POWER OUTPUT PENTODE	A.F. Amplifier (Triode Section)	H	6·3	0·3	100	7·5	0	—	—	1900	21	—
		Class "A" Power Amplifier (Pentode Section)				170	15·0	−6·3	170	2·8	3300	—	0·15
		Frame Output Amplifier (Pentode Section)				70	37·0	- 1	170	9·0	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
2500	3·2	—	Second Harmonic Distortion 5%. For Self-biased Operation Cathode Bias Resistor should be 750 Ω.	8	F	A	G	F	—	—	—	—	—	—	—	6A3
5000 plate to plate	10·0	—	Cathode Bias Resistor 850 Ω. Total Harmonic Distortion 5%. Values are for two tubes.													
8000	1·4	—		15	F_1	A	G_1	G_2	F_2	—	—	—	—	—	—	6A4
★	★	—	★ *For data and notes refer type* 6N7.	20	H	A^{II}	G_1^{II}	K	G_1^{I}	A^{I}	H	—	—	—	—	6A6
	—	0·3	★ *For data and notes refer type* 6A8.	19	H	A	G_3 G_5	G_2	G_1	K	H	—	—	G_4	—	6A7
		0·06	Conversion Conductance = 6 μmhos at — 35 volts (G_4) bias.		S	H	A	G_2 G_5	G_1	G_2	H	K	—	G_4	—	6A8
	—	0·26	Grid No. 2 Current 4·0 mA. through 20,000 Ω (250 volt supply).	30	NC	H	A	G_2 G_5	G_1	G_2	H	K	—	G_4	—	6A8G
		0·26	Osc. Grid (G_1) Current 0·4 mA. Osc. Grid Resistor 50,000 Ω.		S	H	A	G_2 G_5	G_1	G_2	H	K	—	G_4	—	6A8GT
	—	★	★ Grid to Plate Capacity = 0·24 μμF. as grounded grid amplifier and 1·5 μμF. as grounded cathode amplifier.	21	A	IS	H	H	NC	G_1	K	—	—	—	—	6AB4
	—	—	★ *For data and notes refer type* 6N5.	17	H	A^t	G_1^t	T	K	H	—	—	—	—	—	6AB5 6AB5/ 6N5
	—	0·015	Mutual Conductance = 50 μmhos at — 15 volts bias.	30	S	H	G_3	G_1	K	G_3	H	A	—	—	—	6AB7 6AB7/ 1853
	—	1·0	As R.C. Amplifier (170V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Grid Bias — 3·5 volts. Plate Current 0·45 mA. Gain = 11·5.													
11000	1·0		Total Harmonic Distortion 10%.	32	A^t	G_1^t	K S	H	H	A^p	G_2^p	G_3^p	G_1^p	—	—	6AB8
	—	0·2	Minimum Plate Current 26·5 mA. Maximum Plate Current 47·5 mA.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance μmhos	Amplification factor	Plate resistance Meg-ohms
			TYPE	Voltage Volts	Current Amps								
6AC5G 6AC5GT 6AC5GT/G	POWER OUTPUT TRIODE	Dynamic Coupled Power Amplifier	H	6·3	0·4	250	Average 32·0	See Note	—	—	3400	125	0·0367
6AC7 / 1852	TELEVISION SHARP CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·45	300	10·0	See Note	150	2·5	9000	—	1·0 Approx.
6AD7G	TRIODE POWER OUTPUT PENTODE	A.F. Amplifier, Class "A" Power Amplifier	H	6·3	0·85	250 250	4·0 34·0	−25 −16·5	— 250	— 6·5	325 2500	6 —	0·019 0·08
6AD8	DUO-DIODE MEDIUM CUT-OFF R.F. PENTODE	Detector R.F. Amplifier	H	6·3	0·3	250	6·7	−2	85	2·3	1100		1·0
6AE5G 6AE5GT 6AE5GT/G	AMPLIFIER TRIODE	A.F. Amplifier	H	6·3	0·3	95	7·0	−15	—	—	120	4·2	3500 Ohms.
6AE8	TRIODE HEXODE	Frequency Converter	H	6·3	0·3	250	4·5	(G_1 h) 0	(G_{2+4} h) 75	3·4	Conv. 780	—	—
6AF6G	TUNING INDICATOR	Twin Indicator	H	6·3	0·15	Target Volts 250	Target Current 2·2		—	—	—	—	—
6AG5	SHARP CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·3	250 100	7·0 5·5	See Note	150 100	2·0 1·6	5000 4750	-	0·8 0·3
6AG6G	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	6·3	1·2	250	32·0	−6	250	6·0	10000		0·06
6AG7	POWER OUTPUT PENTODE	Video Amplifier	H	6·3	0·65	300	30	−3	150	7·0	11000		0·13
6AH6	SHARP CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·45	300	10	See Note	150	2·5	9000	—	0·5
6A38	TRIODE HEPTODE	Frequency Converter	H	6·3	0·3	250	3·0	−2·5	100 See Note	6·0	Conv. 750	—	1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
7000	3·7	—	With type 76 as driver, bias is developed in the coupling circuit.	30	NC	H	A	—	G_1	—	H	K	—	—	—	**6AC5G 6AC5GT 6AC5GT/G**
—	—	0·015	Cathode Bias Resistor 160 Ω minimum. Plate Current Cut-off at — 5 volts grid bias.	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**6AC7 / 1852**
7000	3·2	—	Triode Unit (t). Pentode Unit (p). Total Harmonic Distortion 8%.	30	G_1^t	H	A^p	G_2^p	G_1^p	A^t	H	K	—	—	—	**6AD7G**
—	—	0·002	Mutual Conductance = 10 μmhos at — 15 volts bias.	32	G_3	G_1	K IS	H	H	A	D_1	D_2	G_2	—	—	**6AD8**
—	—	—		30	NC	H	A	—	G_1	—	H	K	—	—	—	**6AE5G 6AE5GT 6AE5GT/G**
—	—	—	Conversion Conductance = 3·5 μmhos at — 24 volts grid bias. Osc. Plate 100 V. at 4·5 mA. Osc. Grid Resistor 50,000 Ω. Optimum Oscillator Grid Voltage 15 volts peak.	32	G_2^h G_4^h	G_1^h	K	H	H	A^h	G_1^t G_3^h	A^t	IC	—	—	**6AE8**
—	—	—	Ray Control Electrode Voltage = approx. 160 and 0 volts for shadow angles of 0° and 95° respectively.	30	NC	H	G_1^{II}	G_1'	T	—	H	K	—		—	**6AF6G**
—	—	0·025	Cathode Bias Resistor 200 Ω. I_a = 10 μA. for Grid V. = — 8. Cathode Bias Resistor 100 Ω. I_a = 10 μA. for Grid Volts = — 5.	21	G_1	K IS G_2	H	H	A	G_2	K IS G_3	—	—	—	—	**6AG5**
9000	3·75	—		30	NC	H	A	G_2	G_1	—	H	K G_2	—	—	—	**6AG6G**
10000	3·0	0·06	Total Harmonic Distortion 7%.	30	S	H	IS	G_1	K	G_2	H	A	—	—	—	**6AG7**
—	—	0·03	Plate current = 10 μA. for grid bias = — 7 volts. Cathode Resistor = 160 Ω.	21	G_1	G_3	H	H	A	G_2	K	—	—	—	—	**6AH6**
—	—	0·010	Conversion conductance = 7·5 μmhos at — 28·5 volts grid (G_1^h) bias. Osc. grid resistor 47,000 Ω. Osc. grid current 0·2 mA. Series screen resistor 24,000 Ω (250 V. supply).	32	G_2^h G_4^h	G_1^h	S K G_5^h	H	H	A^t	G_3^h	A^t	G_1^t	—	—	**6AJ8**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance μmhos	Amplification factor	Plate resistance Meg-ohms
			TYPE	Voltage Volts	Current Amps								
6AK5	SHARP CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·175	180	7·7	See Note	120	2·4	5100	—	0·69
6AK6	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	6·3	0·15	180	15	−9	180	2·5	2300	—	0·2
6AK8	TRIPLE DIODE HIGH μ TRIODE	Detector, A.F. Amplifier	H	6·3	0·55	250 100	1·0 0·8	3 −1	— —	— —	1200 1300	70 70	0·058 0·054
6AL5	TWIN DIODE	Detector, Half-wave Rectifier	H	6·3	0·3	R.M.S. 150 per plate	Output Current 9·0 per plate	—	—	—	—	—	—
6AL7GT	F.M. TUNING INDICATOR	Tuning Indicator	H	6·3	0·15	Target Volts 315	—	See Note	—	—	—	—	—
6AM5	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	6·3	0·2	250	16·0	See Note	250	2·4	2600	—	0·13
6AM6	SHARP CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·3	250	10·0	−2	250	2·55	7650	—	1·0
6AN7	TRIODE HEXODE	Frequency Converter	H	6·3	0·23	250	(G_1[b]) 3·0	−2·0	(G_{2+4}[b]) See Note	3·0	Conv. 750	—	>1·0
6AQ5	BEAM POWER OUTPUT TETRODE	Class "A" Power Amplifier	H	6·3	0·45	250	45·0	−12·5	250	4·5	4100	—	0·052
		Class "AB_1" Power Amplifier				250	Zero Signal 70·0 Max. Signal 79·0	−15·0	250	Zero Signal 5·0 Max. Signal 13·0	3750 per Tube	—	0·06 per Tube
6AQ6	DUO-DIODE HIGH μ TRIODE	Detector A.F. Amplifier	H	6·3	0·15	100 250	0·8 1·0	−1 3	— —	— —	1150 1200	70 70	0·061 0·058

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
	— —	0·02	Plate Current Cut-off at — 7 volts grid bias. Cathode Bias Resistor = 200 Ω.	21	G_1	K IS G_3	H	H	A	G_2	K IS G_3		—			**6AK5**
10000	1·1	0·12	Suppressor Grid connected to Cathode at socket. Total Distortion 10%.	21	G_1	G_3	H	H	A	G_2	K					**6AK6**
	— —	2·2		32	A	G_1	S K_t K_{d1} K_{d3}	H	H	K_{d2}	D_3	D_1	D_2	—		**6AK8**
	—	—	Minimum Total Plate Supply Impedance 300 Ω. The two units may be used separately or in parallel.	21	K^I	A^{II}	H	H	K^{II}	IS	A^I					**6AL5**
	—	—	Cathode Bias Resistor = 3300 Ω. Deflection Sens. = 1mm./V.	30	G	H	T	DE^{II}	DE^{III}	DE^I	H	K				**6AL7GT**
16000	1·4	0·5	Cathode Resistor 680 Ω. Total Distortion 10%.	21	G_1	K G_3	H	H	A	NC	G_2					**6AM5**
	—	0·008	Plate Current Cut-off at — 5 volts grid bias.	21	G_1	K	H	H	A	G_3 S	G_2	—				**6AM6**
	—	0·1	Screen connected to junction of two resistors in series, each 27,000 Ω, connected between B + and ground. Osc. Plate Current 5·1 mA. through 33,000 Ω (250 volts supply). Osc. Grid Resistor 47,000 Ω. Osc. Grid Current 0·2 mA. Effective Osc. G_m = 550 μmhos. Osc. G_m when not oscillating = 2800 μmhos. Hexode Plate Current Cut-off at — 29 volts grid (G_1^h) bias.	32	G_2^h G_4^h	G_1^h	K S	H	H	IC	A^h	A^t	G_3^h G_1^t			**6AN7**
5000	4·5	0·35	Total Harmonic Distortion 8%.	21	G_1	K G_3	H	H	A	G_2	G_1		—	—	—	**6AQ5**
10000 Plate to Plate	10·0		Unless otherwise specified values are for two tubes. Peak A.F. Grid to Grid Volts = 30. Total Harmonic Distortion 5%.													
	—	1·8	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·47 meg. Cathode Resistor 6300 Ω. Gain = 50.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**6AQ6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
6AQ7GT	**DUO-DIODE HIGH μ TRIODE**	Detector, A.F. Amplifier	H	6·3	0·3	250	2·3	−2	—	—	1600	70	0·044
6AR5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·4	250 250	32·0 34·0	−18 −16·5	250 250	5·5 5·7	2300 2400	— —	0·068 0·065
6AR7GT	**DUO-DIODE MEDIUM CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·3	250	7·0	−2	100	1·8	2500	—	1·0
6AS5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	6·3	0·8	150	35·0	−8·5	110	2·0	5600	—	—
6AS6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·175	120 120	5·2 3·6	−2 (G_1) −2	120 120	3·5 4·8	3200 1850	— —	0·15 —
6AS7G	**TWIN POWER OUTPUT TRIODE**	D.C. Amplifier	H	6·3	2·5	135	125	See Note	—	—	7000	2	280 Ohms.
6AT6	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	250 100	1·0 0·8	−3 −1	— —	— —	1200 1300	70 70	0·058 0·054
6AU5GT	**BEAM POWER OUTPUT TETRODE**	Horizontal Deflection Amplifier	H	6·3	1·25	310 315	55 59	See Note	130 150	7·0 9·0	— —	— —	— —
6AU6	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·3	250 100	10·8 5·2	−1 −1	150 100	4·3 2·0	5200 3900	— —	1·0 0·5
6AV6	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	100 250	0·5 1·2	−1 −2	— —	— —	1250 1600	100 100	0·08 0·0625

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
	—	3·0	K^d provides the stream for Diode Plates D_1 and D_2. K^t provides the stream for the Triode Unit.	30	D_2	K^d	D_1	$G_1{}^t$	A^t	K^t	H	H	—	—	—	**6AQ7GT**
7000	3·4	—	Total Distortion 11%.	21	G_1	K G_3	H	H	A	G_2	NC		—		—	**6AR5**
7000	3·2		Total Distortion 7%.													
	—	0·003	Mutual Conductance = 20 μmhos at — 25 volts grid bias.	30	H	S	A	G_2	D_2	D_1	G_3 K	H	—	G_1	—	**6AR7GT**
4500	2·2	0·6	Total Harmonic Distort. 10%.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**6AS5**
	—	0·025	Grid No. 3 voltage = 0. I_a = 100 μA at — 10 volts grid (G_1) bias. I_a = 20 μA at — 15 volts grid (G_3) bias.	21	G_1	K	H	H	A	G_2	G_3	—	—	—	—	**6AS6**
	—		Grid No. 3 Voltage — 3 volts.													
	—	—	Cathode Resistor 250 Ω values for each unit.	30	$G_1{}^{II}$	A^{II}	K^{II}	$G_1{}^I$	A^I	K^I	H	H	—	—	—	**6AS7G**
	—	2·1	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Cathode Resistor 6300 Ω. Gain = 50.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**6AT6**
	—	0·5	Cathode Resistor 80 Ω.	30	G_1	H	K G_3	—	A	—	H	G_2	—	—	—	**6AU5GT**
	—		Cathode Resistor 90 Ω.													
	—	0·0035	Grid No. 3 connected to Cathode at Socket. Plate Current = 10 μA at — 6·2 volts (150 volts screen) and — 4·2 volts (100 volts screen) grid bias. As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Screen Resistor 1·1 meg. Cathode Resistor 1900 Ω. Gain = 318.	21	G_1	G_2 IS	H	H	A	G_2	K	—	—	—	—	**6AU6**
	—		As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·47 meg. Cathode Resistor = 5200 Ω. Gain = 73.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**6AV6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage	Current	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
6AX5GT	FULL-WAVE VACUUM RECTIFIER	Full-Wave Rectifier	H	6·3	1·2	R.M.S. 2 x 350 2 x 450	D.C. Output 125·0 80·0	— —	— —	— —	— —	—	—
6B4G	POWER OUTPUT TRIODE	Class "A" Power Amplifier	F	6·3	1·0	★	★	★	—	—	★	★	★
6B5	DIRECT-COUPLED POWER OUTPUT TRIODE	A.F. Amplifier and Class "A" Power Amplifier	H	6·3	0·8	★	★	★	—	—	★	★	★
6B6G	DUO-DIODE HIGH μ TRIODE	Detector A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
6B7	DUO-DIODE MEDIUM CUT-OFF PENTODE	Detector R.F. and A.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
6B7S	DUO-DIODE REMOTE CUT-OFF PENTODE	Detector R.F. and A.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
6S8	DUO-DIODE MEDIUM CUT-OFF PENTODE	Detector R.F. and A.F. Amplifier	H	6·3	0·3	250	10·0	—3	125	2·3	1325	—	0·6
6B8G	DUO-DIODE MEDIUM CUT-OFF PENTODE	Detector R.F. and A.F. Amplifier	H	6·3	0·3	250	9·0	—3	125	2·3	1125	—	0·6
6BA8	MEDIUM CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·3	250 100	11·0 10·8	See Note	100 100	4·2 4·4	4400 4300	— —	1·5 0·25
6BA7	PENTAGRID	Frequency Converter	H	6·3	0·3	250 100	3·8 3·6	—1 (G_2) —1	100 (G_{2+4}) 100	10·0 10·2	950 Conv. 900	— —	1·0 0·5

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	With less than 10 μF. condenser input to filter, minimum plate supply impedance per plate = 50 and 105 Ω respectively. Greater supply impedances required for larger input capacities.	30	NC	H	A^{II}	—	A^{I}	—	H	K		—	—	**6AX5GT**
★	★	—	★ *For data and notes refer type* 6A3.	30	NC	F	A	NC	G_1	NC	F	NC	—	—	—	**6B4G**
★	★	—	★ *For data and notes refer type* 6N6G.	17	H	A^{O}	A^{I}	G_1^{I}	K	H	—	—	—	—	—	**6B5**
		1·7	★ *For data and notes refer type* 6SQ7GT.	30	NC	H	A	D_2	D_1	—	H	K	—	G_1	—	**6B6G**
	—	0·007	★ *For data and notes refer type* 6B8G.	19	H	A	G_3	D_2	D_1	K G_3	H	—	—	G_1	—	**6B7**
	—	0·007	★ *For data and notes refer type* 6G8G.	19	H	A	G_2	D_2	D_1	K G_3 S	H	—	—	G_1	—	**6B7S**
		0·005	*Refer to additional data and notes on* 6B8G. *These also apply to type* 6B8.	30	S	H	A	D_2	D_1	G_2	H	K	—	G_1	—	**6B8**
	—	0·01	Plate Current Cut-off at — 21 volts grid bias. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Screen Resistor 2·9 meg. Cathode Resistor 2500 Ω. Gain = 150.	30	NC	H	A	D_2	D_1	G_2	H	K G_3	—	G_1	—	**6B8G**
	— —	0·0035	Suppressor Grid connected to Cathode at Socket. Cathode Resistor 68 Ω. Mutual Conductance = 40 μmhos at — 20 volts grid bias.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**6BA6**
	— —	0·19	Osc. Grid (G_1) Resistor = 20,000 Ω in each case. Osc. Grid Current 0·35 mA.	32	G_2 G_4	G_1	K	H	H	G_5 IS	G_2	IS	A	—	—	**6BA7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
6BD6	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250 125 100	9·0 13·0 13·0	−3 −3 −1	100 125 100	3·0 5·0 5·0	2000 2350 2550	— — —	0·8 0·18 0·15
6BD7	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·23	250	1·0	−3	—	—	1200	70	0·058
6BE6	**PENTAGRID**	Frequency Converter	H	6·3	0·3	250 100	3·0 2·8	−1·5 (G_3) −1·5	100 (G_{2+4}) 100	7·1 7·3	475 Conv. 455	— —	1·0 0·5
6BE7	**ENNEODE**	F.M. Detector and Limiter	H	6·3	0·2	Supply 250	0·28	See Note	20·0	1·5	—	—	>5
6BF6	**DUO-DIODE TRIODE**	Detector and A.F. Amplifier	H	6·3	0·3	250	9·5	−9	—	—	1900	16	8500 Ohms.
6BG6G	**BEAM POWER OUTPUT TETRODE**	Deflection Amplifier	H	6·3	0·9	500 Max.	100 Max.	50 Max.	350 Max.	—	—	—	—
6BH5	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	250	6·0	−2·5	See Note	1·7	2200	—	1·0
6BH6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	250 100	7·4 3·6	−1 −1	150 100	2·9 1·4	4600 3400	— —	1·4 0·7

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
	—	—	Mutual Conductance 10 μmhos			G_3										
	—	0·005	at — 35 volts bias.	21	G_1		H	H	A	G_2	K	—	—	—	—	**6BD6**
	—		at — 45 volts bias.			IS										
	—	1·3	As R.C. Amplifier (250 V. supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·22 meg. Cathode Resistor = 1800 Ω. Gain = 51.	32	A	G_1	K	H	H	D_1	IS	D_2	IC	—	—	**6BD7**
	—		Osc. Grid (G_1) Resistor 20,000 Ω. Osc. Grid Current 0·5 mA.			K				G_3						
	—	0·3	Conversion Conductance = 4 μmhos at — 30 volts Grid (G_3) Bias.	21	G_1	G_5	H	H	A	G_4	G_3	—	—	—	—	**6BE6**
	—	—	Plate Load Resistor 0·47 meg. Pin 1 and pins 3 and 7 are connected to sections of a potentiometer between B + and B — consisting of:— R_1 = 34,000 Ω. R_2 = 3,900 Ω. R_3 = 560 Ω. R_1 is connected to B +. Pin 1 is connected to the junction of R_1 and R_2. Pins 3 and 7 tied together are connected to the junction of R_2 and R_3. Grids Nos. 3 and 5 R.M.S. Voltage = 12. Phase angle between R.M.S. voltages applied to Grids Nos. 3 and 5 = 90°.	32	G_2 G_4 G_6	G_3	K G_7	H	H	A	G_1	K G_7	G_5	—	—	**6BE7**
10000	0·3	2·0	Distortion as Power Amplifier 6·5%. As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·22 meg. Cathode Resistor 13,000 Ω. Gain = 12.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**6BF6**
	—	0·5		30	NC	H	K G_3	—	G_1	—	H	G_2	—	A	—	**6BG6G**
	—	0·002	Series Screen Resistor 90,000 Ω (250 volts supply). Mutual Conductance = 22 μmhos at — 39 volts grid bias.	32	G_2	G_1	K G_3 IS	H	H	A	IC	IC	NC	—	—	**6BH5**
	—		Plate Current = 10 μA. at — 7·7 volts bias.								G_3					
	—	0·0035	Plate Current = 10 μA. at — 5 volts bias.	21	G_1	K	H	H	A	G_2	IS	—	—	—	—	**6BH6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
6BJ5	**POWER OUTPUT R.F. PENTODE**	Class "A" Power Amplifier	H	6·3	0·64	250	36·0	−5·5	250	5·0	—	—	—
6BJ6	**MEDIUM CUT-OFF PENTODE**	R.F. Amplifier	H	6·3	0·15	250 100	9·2 9·0	−1 −1	100 100	3·3 3·5	3800 3650	— —	1·3 0·25
6BV7	**DUO-DIODE POWER OUTPUT PENTODE**	Detector, Class "A" Power Amplifier	H	6·3	0·8	250 180	38 20	−5 −4	250 180	6·0 3·5	10,000 8,000	— —	0·1 0·13
6BX6	**SHARP CUT-OFF R.F. PENTODE**	Television Amplifier or Mixer	H	6·3	0·3	170	10·0	−2	170	2·5	7200	—	0·4
6BY7	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	10	−2	100	2·6	6500	—	0·7
6C4	**V.H.F. POWER TRIODE**	A.F. Amplifier Class "C" Power Amplifier, Oscillator	H	6·3	0·15	250 300	10·5 25·0	−8·5 −27	— —	— —	2200 —	17 —	7700 Ohms. —
6C5 6C5G 6C5GT 6C5GT/G	**DETECTOR TRIODE**	A.F. Amplifier	H	6·3	0·3	250	8·0	−8	—	—	2000	20	0·01
6C6	**SHARP CUT-OFF PENTODE**	Biased Detector and A.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
6C8G	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·3	250	3·2	−4·5	—	—	1600	36	0·0225
6CB6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	200	9·5	See Note	150	2·8	6200	—	0·6

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
7000	4·0	0·3	Total Distortion 10%. The external grid circuit resistance should not exceed 0·25 meg. with auto. bias or 0·1 meg. with fixed bias.	21	G_1	K G_3	H	H	A	IC	G_2	—	—	—	—	**6BJ5**
	—	0·0035	Mutual Conductance = 15 µmhos at − 20 volts bias.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**6BJ6**
8000 8000	4·0 2·0	—	Total Harmonic Distortion 10% in each case.	32	D_1	A	G_2	H	H	D_2	K G_3	G_1	K G_2	—	—	**6BV7**
	—	0·007	Plate Current Cut-off at − 5 volts grid bias.	32	K	G_1	K	H	H	S	A	G_2	G_3	—	—	**6BX6**
	—	0·005	Mutual conductance = 65 µmhos at − 35 volts grid bias. Equivalent noise resistance 1700 Ω.	32	K	G_1	K	H	H	S	A	G_2	G_3	—	—	**6BY7**
—	— 5·5	1·6	As Class "C" Power Amplifier and Oscillator D.C. Grid Current 7·0 mA. Driving Power 0·35 watt. Approx. 2·5 W. can be obtained when used at 150 Mc/s. as an oscillator with 1000 Ω grid resistor and maximum rated input.	21	A	IC	H	H	A	G	K	—	—	—	—	**6C4**
—	—	2·0 2·2 2·2 2·2	As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·25 meg. Cathode Resistor = 14,000 Ω. Gain = 14.	30	S	H	A	—	G_1	—	H	K	—	—	—	**6C5 6C5G 6C5GT 6C5GT/G**
—	—	0·007	★ *For data and notes refer type* 6J7G. *For replacement consider also type* 6SJ7GT.	17	H	A	G_2	G_3	K IS	H	—	—	—	G_1	—	**6C6**
—	—	2·6 1·8	Values for each unit. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·5 meg. Cathode Resistor = 11,500 Ω. Gain = 27.	30	NC	H	A"	K"	G_1'	A'	H	K'	—	G_1"	—	**6C8G**
—	—	0·02	Plate Current = 10 µA. at − 8 volts grid bias. Cathode Resistor 180 Ω.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**6CB6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
6CD6G	**BEAM POWER OUTPUT TETRODE**	Horizontal Deflection Amplifier	H	6·3	2·5	500	92	See Note	170	15·0	—	—	—
6CJ6	**LINE OUTPUT PENTODE**	Line Output Amplifier and Class "B" Power Amplifier	H	6·3	1·05	★	★	★	★	★	★	—	—
6CK6	**VIDEO OUTPUT PENTODE**	Video Amplifier	H	6·3	0·71	★	★	★	★	★	★	—	★
6D6	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
6D8G	**PENTAGRID**	Frequency Converter	H	6·3	0·15	250	3·5	(G_4) −3	(G_{2+4}) 100	2·6	Conv. 550	—	0·4
6E5	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·3	Target Volts 250	Target Current 2·0	−7·5 For Shadow Angle 0°	—	—	—	—	—
6F5 **6F5GT**	**HIGH μ TRIODE**	A.F. Amplifier	H	6·3	0·3	250	0·9	−2	—	—	1500	100	0·066
6F6	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·7	250	Zero Signal 34·0 Max. Signal 36·0	−16·5	250	Zero Signal 6·5 Max. Signal 10·5	2500	—	0·08
6F6G **6F6GT** **6F6GT/G**		Class "AB_2" Power Amplifier				375	Zero Signal 54·0 Max. Signal 77·0	Self Bias	250	Zero Signal 8·0 Max. Signal 18·0	—	—	—
6F7	**TRIODE REMOTE CUT-OFF PENTODE**	A.F. and R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	★	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
- -	—	1·0	Cathode Resistor 300 Ω.	30	NC	H	K G_3	—	G_1	—	H	G_2	—	A	—	**6CD6G**
- -	—	—	★ *For data and notes refer type* 21A6.	32	K	G_1	K	H	H	IC	IC	G_2	G_2	A	—	**6CJ6**
- -	—	—	★ *For data and notes refer type* 15A6.	32	G_2	G_1	K	H	H	G_2	A	S	NC	—	—	**6CK6**
—	—	0·007	★ *For data and notes refer type* 6U7G.	17	H	A	G_2	G_3	K	H	—	—	—	G_1	—	**6D6**
—	—	0·2	Conversion Conductance = 6 μmhos at — 35 volts grid (G_4) bias. Grid No. 2 Current 4·3 mA through 20,000 Ω (250 volts supply). Osc. Grid (G_1) Current 0·4 mA. Osc. Grid Resistor 50,000 Ω.	30	NC	H	A	G_3 G_5	G_1	G_2	H	K	—	G_4	—	**6D8G**
—	—	—	Triode Plate Resistor 1·0 meg. Triode Plate Current 0·2 mA.	17	H	A	G_1[t]	T	K	H	—	—	—	—	—	**6E5**
—	—	2·4 2·8	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·5 meg. Cathode Resistor = 5400 Ω. Gain = 70.	30	S NC	H H	NC NC	A A	NC NC	—	H H	K K	—	G_1 G_1	— —	**6F5** **6F5GT**
7000	3·2	0·2	Total Harmonic Distortion 8%. For Self-biased Operation the Cathode Bias Resistor should be 410 Ω.	30	S	H	A	G_2	G_1	—	H	K	—	—	—	**6F6**
Plate to Plate 10000	19·0	0·5 0·5 0·5	Cathode Resistor 340 Ω. Peak A.F. Grid to Grid Volts = 94. Values are for two tubes. Total Harmonic Distortion 5%.		NC	H	A	G_2	G_1	—	H	K	—	—	—	**6F6G** **6F6GT** **6F6GT/G**
- -	—	2·0 0·008	★ *For data and notes refer type* 6P7G.	19	H	A[p]	G_2	A[t]	G_1[t]	K	H	—	—	G_1[p]	—	**6F7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance μmhos	Amplification factor	Plate resistance Meg-ohms
			TYPE	Voltage Volts	Current Amps								
6F8G	**TWIN TRIODE**	**A.F. Amplifier**	H	6·3	0·6	250	9·0	−8	—	—	2600	20	7700 Ohms.
6G5	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·3	★	★	★	—	—	—	—	—
6Q6G	**POWER OUTPUT PENTODE**	Class "A_1" Power Amplifier	H	6·3	0·15	135 180	11·5 15·0	−6 −9	135 180	2·0 2·5	2100 2300	— —	0·17 0·175
6Q8G	**DUO-DIODE REMOTE CUT-OFF PENTODE**	Detector, R.F. and A.F. Amplifier	H	6·3	0·3	250 250	9·5 6·5	−3 −3	125 100	2·2 1·5	1210 1100	— —	0·51 0·85
6H6 **6H6G** **6H6GT** **6H6GT/G**	**TWIN DIODE**	Detector Full-wave Rectifier	H	6·3	0·3	Max. R.M.S. 2 x 117	D.C. Output per Plate 4·0	—	—	—	—	—	—
6H6GA	**TWIN DIODE**	Detector Rectifier	H	6·3	0·2	★	★	—	—	—	—	—	—
6J4	**U.H.F. TRIODE**	Grounded Grid Amplifier	H	6·3	0·4	100 150	10·0 15·0	See Note	— —	— —	11000 12000	55 55	5000 Ohms. 4500
6J5 **6J5G** **6J5GT** **6J5GT/G**	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier	H	6·3	0·3	250	9·0	−8	—	—	2600	20	7700 Ohms.
6J8	**TWIN TRIODE**	R.F. Amplifier	H	6·3	0·45	100	8·5	See Note	—	—	5300	38	7100 Ohms.

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
	—	$3{\cdot}8_{t_1}$ $3{\cdot}2_{t_2}$	Values for each unit. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Cathode Resistor 6950 Ω. Gain = 14.	30	NC	H	A"	K"	G_1'	A'	H	K'	—	G_1"	—	6F8G
—	—	—	★ *For data and notes refer type* 6U5/6G5.	17	H	A'	G_1'	T	K	H	—	—	—	—	—	6G5
12000 10000	0·6 1·1	0·5	Total Distortion 7·5%. Total Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K	—	—	—	6G6G
—	—	0·007	Mutual Conductance = 10 μmhos at − 43 volts (125 volts Screen) and − 35 volts (100 volts Screen) Grid Bias. As R.C. Amplifier. Plate and Screen Supply 250 V. Plate Load Resistor 0·25 meg. Following Grid Leak 1·0 meg. Cathode Resistor 2000 Ω. Screen Voltage from a voltage divider of 1·0 meg. to B + and 0·25 meg. to B −. Gain = 93.	30	NC	H	A	D_2	D_1	S	H	K	—	G_1	—	6G8G
—	—	—	With less than 40 μF. condenser input to filter, minimum plate supply impedance = 15 Ω per plate. Greater Supply Impedances required for larger input capacities.	30	S IS	H H	D_2 D_2	K" K"	D_1 D_1	— —	H H	K' K'	— —	— —	— —	6H6 6J6G 6H6GT 6H6GT/G
	—	—	★ *For data and notes refer type* EB34.	30	S M	H	D_1	K'	D_2	—	H	K"	—	—	—	6H6GA
— —	— —	4·0	Cathode Resistor 100 Ω.	21	G_1	K	H	H	G_1	G_1	A	—	—	—	—	6J4
	—	3·4 3·8 3·8 3·8	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Cathode Resistor 6950 Ω. Gain = 14.	30	S	H	A	—	G_1	—	H	K	—	—	—	6J5 6J5G 6J5GT 6J5GT/G
	—	1·6	Values per Section. Cathode Resistor 50 Ω.	21	A"	A'	H	H	G_1'	G_1"	K	—	—	—	—	6J6

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
6J7	SHARP CUT-OFF PENTODE	R.F. and A.F. Amplifier (Pentode Connected)	H	6·3	0·3	250	2·0	−3	100	0·5	1225	—	> 1·0
6J7G													
6J7GT		A.F. Amplifier (Triode Connected)				250	6·5	−8	—	—	1900	20	0·0105
6J7G / 1620	SHARP CUT-OFF PENTODE	Low Noise Amplifier	H	6·3	0·3	★	★	★	★	★	★	★	★
6J8G	TRIODE HEPTODE	Frequency Converter	H	6·3	0·3	250	1·3	(G_1 h) −3	(G_{2+4} h 100	2·9	Conv. 290	—	4·0
6J8GA	TRIODE HEPTODE	Frequency Converter	H	6·3	0·45	250	1·3	(G_1 h) −3	(G_{2+4} h) 100	2·9	Conv. 290	—	4·0
6K4	OSCILLATOR TRIODE	U.H.F. Amplifier	H	6·3	0·15	100	13	−2	—	—	5500	20	3640 ohms
6K5 6K5G 6K5GT 6K5GT/G	HIGH μ TRIODE	A.F. Amplifier	H	6·3	0·3	250	1·1	−3	—	—	1400	70	0·05
6K6G 6K6GT 6K6GT/G	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	6·3	0·4	250	Zero Signal 32·0 Max. Signal 33·0	−18	250	Zero Signal 5·5 Max. Signal 10·0	2300	—	0·068
6K7 6K7G 6K7GT	REMOTE CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·3	250	7·0	−3	100	1·7	1450	—	0·8
						250	10·5	−3	125	2·6	1650	—	0·6

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
	—	0·005	Cathode Current Cut-off at — 7 volts grid bias. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Screen Resistor 2·9 meg. Cathode Resistor 2200 Ω. Gain = 200.		S	H	A	G_2	G_3	—	H	K	—	G_1	—	**6J7**
		0·007		30	IS	H	A	G_2	G_3	—	H	K	—	G_1	—	**6J7G**
	—	0·005	Grids Nos. 2 and 3 connected to plate. As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Cathode Resistor 14,000 Ω. Gain = 14.		S	H	A	G_2	G_3	—	H	K	—	G_1	—	**6J7GT**
		0·007	★ *For data and notes refer type* 6J7G. *Type* 6J7G/1620 *is especially selected for low microphonics and low hum.*	30	IS	H	A	G_2	G_3	—	H	K	—	—	—	**6J7G / 1620**
—	—	0·01	Conversion Conductance = 2 μmhos at — 20 volts grid bias. Osc. Plate Current 5·0 mA. through 20,000 Ω (250 volts supply). Osc. Grid Current 0·4 mA. Osc. Grid Resistor 50,000Ω. Osc. G_m = 1600 μmhos.	30	NC	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$ $G_3{}^h$	A^t	H	K	—	$G_1{}^h$	—	**6J8G**
	—	0·01	Conversion Conductance = 2 μmhos at — 20 volts grid bias. Osc. Plate Current 5·0 mA through 20,000 Ω (250 volts supply). Osc. Grid Current 0·4 mA. Osc. Grid Resistor 50,000 Ω.	30	NC	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$ $G_3{}^h$	A^t	H	K	—	$G_1{}^h$	—	**6J8GA**
—	0·75	—		31	G_1	A	H	A	NC	H	K	A	—	—	—	**6K4**
		—														**6K5**
		2·0														**6K5G**
—	—	2·0	*For data as an R.C. Amplifier refer type* 6Q7.	30	S	H	A	NC	NC	—	H	K	—	G_1	—	**6K5GT**
		2·0														**6K5GT/G**
7600	3·4	0·5	Total Harmonic Distortion 11%.	30	NC	H	A	G_2	G_1	—	H	K	—	—	—	**6K6G** **6K6GT** **6K6GT/G**
—	—	0·005	Mutual Conductance = 2		S	H	A	G_2	G_3	—	H	K	—	G_1	—	**6K7**
		0·007	μmhos at — 42·5 volts bias	30	NC	H	A	G_2	G_3	—	H	K	—	G_1	—	**6K7G**
	—	0·005	(100 volts screen).		S	H	A	G_2	G_3	—	H	K	—	G_1	—	**6K7GT**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance μmhos	Amplification factor	Plate resistance Meg-ohms
			TYPE	Voltage Volts	Current Amps								
6K8 6K8G 6K8GT	TRIODE HEXODE	Frequency Converter	H	6·3	0·3	250	2·5	(G_3h) −3	(G_{2+4}h) 100	6·0	Conv. 350	—	0·6
6L4	OSCILLATOR TRIODE	Amplifier	H	6·3	0·225	80	9·5	See Note	—	—	6400	28	4400 Ohms.
6L5G	DETECTOR TRIODE	Amplifier	H	6·3	0·15	250	8·0	−9	—	—	1900	17	9000 Ohms.
6L6 6L6G 6L6GA	BEAM POWER OUTPUT TETRODE	Class "A" Power Amplifier	H	6·3	0·9	250	Zero Signal 75·0 Max. Signal 78·0	See Note	250	Zero Signal 5·4 Max. Signal 7·2	6000	—	0·025
		Class "AB_2" Power Amplifier				360	Zero Signal 88·0 Max. Signal 205·0	−22·5 Fixed Bias	270	Zero Signal 5·0 Max. Signal 16·0	—	—	—
6L7	PENTAGRID	Mixer	H	6·3	0·3	250	2·4	−3 (G_1)	100 (G_{2+4})	7·1	Conv. 375	—	> 1·0
6L7G		R.F. Amplifier				250	5·3	−3	100	6·5	1100	—	0·6
6M5	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	6·3	0·71	250	36·0	See Note	250	5·2	10.000	—	0·04
						200	30·0		200	4·1	—	—	—
						150	20·0		150	2·7	—	—	—
		Class "AB_1" Power Amplifier				250	Zero Signal 2 x 36·0 Max. Signal 2 x 39·5	See Note	250	Zero Signal 2 x 5·2 Max. Signal 2 x 8·0	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
		0·03	Conversion Conductance = 2 μmhos at − 30 volts grid (G_3) bias.		S	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$ $G_1{}^t$	A^t	H	K	—	$G_3{}^h$	—	**6K8**
	—	0·08	Triode Plate 100 volts 3·8 mA. Osc. Grid Current 0·15 mA. Osc. Grid Resistor 50,000 Ω.	30	NC	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$ $G_1{}^t$	A^t	H	K	—	$G_3{}^h$	—	**6K8G**
		0·08	Osc. G_m = 3000 μmhos.		S	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$ $G_1{}^t$	A^t	H	K		$G_3{}^h$	—	**6K8GT**
	—	1·6	Cathode Bias Resistor = 150 Ω.	25	H	G	A	A	G	H	K	—	—	—	—	**6L4**
—	—	2·7	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Cathode Resistor 10,750 Ω. Gain = 13.	30	NC	H	A	—	G_1	—	H	K				**6L5G**
2500	6·5		Cathode Bias Resistor 170 Ω. Total Harmonic Distortion 10%.	30	S	H	A	G_2	G_1	—	H	K	—	—	—	**6L6**
3800 Plate to Plate	47·0		Peak A.F. Grid to Grid volts = 72. Peak Grid—Input Power = 0·27 W. Values are for two tubes. Total Harmonic Distortion 2%.		NC	H	A	G_2	G_1	—	H	K	—	—		**6L6G** **6L6GA**
—	—	0·001	Conversion Conductance = 5 μmhos at − 30 volts grid (G_1) bias. Osc. Injector grid (G_2) − 10 volts bias. Peak Oscillator grid (G_2) volts = 12 min.	30	S	H	A	G_2 G_4	G_3	—	H	K G_5	—	G_1	—	**6L7**
—	—	0·005	Mutual Conductance = 5 μmhos at − 15 volts grid (G_1 and G_3 simultaneously) bias.		NC	H	A	G_2 G_4	G_3	—	H	K G_5	—	G_1	—	**6L7G**
7000	3·9		Cathode bias resistors: 170 Ω													
7000	2·75		140 Ω													
7000	1·3		160 Ω Total harmonic distortion 10% in each case.													
		1·0		32	G_3	G_1	K G_3	H	H	IC	A	IC	NC	—	—	**6M5**
7000 Plate to Plate	9·4		Cathode bias resistor 85 Ω. Total harmonic distortion 4·6%. R.M.S. Grid input voltage = 5·6 V.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage	Current	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
6N5	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·15	Target Volts 135	Target Current 2·0	−10 For Shadow Angle* 0°	—	—	—	—	—
6N8G	**DIRECT COUPLED POWER AMPLIFIER**	A.F. Amplifier and Class "A" Power Amplifier	H	6·3	0·8	300 300	9 42	Internally Developed	— —	— —	Input to Output 2400	58	— 0·024
6N7 **6N7G** **6N7GT** **6N7GT/G**	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier and A.F. Amplifier	H	6·3	0·8	300	35·0 Min. 70·0 Max.	0	—	—	—	—	—
6N8	**DUO-DIODE REMOTE CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	6·3	0·3	250	5·0	−2	85*	1·75	2200	—	1·5
6P5G **6P5GT** **6P5GT/G**	**AMPLIFIER TRIODE**	A.F. Amplifier	H	6·3	0·3	250 100	5·0 2·5	−13·5 −5·0	— —	— —	1450 1150	13·8 13·8	9500 Ohms. 12000
6P7G	**TRIODE REMOTE CUT-OFF R.F. PENTODE**	Amplifier	H	6·3	0·3	100 250	3·5 6·5	−3 −3	— 100	— 1·5	500 1100	8 —	0·016 0·85
6Q4	**V.H.F. TRIODE**	Grounded Grid Amplifier	H	6·3	0·48	250	15·0	−1·5	—	—	12000	80	—
6Q7 **6Q7G** **6Q7GT**	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	250	1·0	−3	—	—	1200	70	0·058
6R4	**U.H.F. TRIODE**	Oscillator (Up to 1500 Mcs.)	H	6·3	0·2	230 275	18·2 17·0	— —	— —	— —	— —	— —	— —

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
	—	—	Triode Plate Resistor 0·25 meg. Triode Plate Current = 0·5 mA.	17	H	A	G_1^t	T	K	H	—	—	—	—	—	6N5
	—	—	Input Triode.	30	NC	H	A^o	A^i	G_1^i	—	H	K	—	—	—	6N6G
7000	4·0	—	Output Triode. Total Harmonic Distortion 5%.													
			Peak Grid Current = 22·0 mA. per unit. Peak A.F. Grid to Grid volts = 82. Total Harmonic Distortion 8%. Third Harmonic Distortion 7·5%.		S	H	A^{II}	G_1^{II}	G_1^I	A^I	H	K	—	—	—	6N7
8000 Plate to Plate	10·0	—	Fifth Harmonic Distortion 2·5%. Values are for the two units. As R.C. Phase Inverter (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Cathode Resistor 6100 Ω. Gain = 24.	30	NC	H	A^{II}	G_1^{II}	G_1^I	A^I	H	K	—	—	—	6N7G 6N7GT 6N7GT/G
	—	0·002	Mutual Conductance = 22 μmhos at − 41·5 volts grid bias. *Series Screen Resistor 95,000 Ω (250 volts supply). As R.C. Amplifier (250 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·22 meg. Screen Resistor 0·65 meg. Cathode Resistor 1200 Ω. Gain = 150.	32	G_2	G_1	K IS	H	H	A	D_1	D_2	G_2	—	—	6N8
—	—	2·6	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Cathode Resistor 18,300 Ω. Gain = 10.	30	NC	H	A	—	G_1	—	H	K	—	—	—	6P5G 6P5GT 6P5GT/G
—	—	2·6														
—	—	2·6														
—	—	2·0	Triode Unit.	30	NC	H	H	A^p	G_2	A^t	G_1^t	K	—	G_1^p	—	6P7G
—	—	0·008	Pentode Unit $\begin{cases} G_m = 10\,\mu\text{mhos} \\ \text{at} -35\text{ V. bias.} \end{cases}$													
—	—	3·4		32	G_1	G_1	K	H	H	NC	G_1	G_1	A	—	—	6Q4
		1·4	As R.C. Amplifier (300 V. supply).		S	H	A	D_2	D_1	—	H	K	—	G_1	—	6Q7
	—	1·5	Following Grid Leak 1·0 meg. Plate Resistor = 0·47 meg.	30	NC	H	A	D_2	D_1	—	H	K	—	G_1	—	6Q7G
		1·6	Cathode Resistor = 6300 Ω. Gain = 50.		S	H	A	D_2	D_1	—	H	K	—	G_1	—	6Q7GT
—	0·7	1·5	750 Mc/s. Grid Current = 1·8 mA.	32	G_1	NC	K	H	H	NC	NC	A	NC	—	—	6R4
—	1·8		375 Mc/s. Grid Current = 3·0 mA.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
6R7 6R7G 6R7GT 6R7GT/G	DUO-DIODE TRIODE	Detector A.F. Amplifier	H	6·3	0·3	250	9·5	−9	—	—	1900	16	8500 Ohms.
6S4	AMPLIFIER TRIODE	Vertical Deflection Amplifier	H	6·3	0·6	450	18·0	See Note	—	—	—	—	—
6S7 6S7G	REMOTE CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·15	250	8·5	−3	100	2·0	1750	—	1·0
6S8GT	TRIPLE DIODE HIGH μ TRIODE	Detector A.F. Amplifier	H	6·3	0·3	250	0·9	−2	—	—	1100	100	0·091
6SA7 6SA7GT 6SA7GT/G	PENTAGRID	Frequency Converter	H	6·3	0·3	250	3·5	0	(G_{2+4}) 100	8·5	Conv. 450	—	1·0
6SB7	PENTAGRID	Frequency Converter	H	6·3	0·3	250	3·8	(G_3) −1	(G_{2+4}) 100	10·0	Conv. 950	—	1·0
6SC7	TWIN TRIODE	A.F. Amplifier	H	6·3	0·3	250	2·0	−2	—	—	1325	70	0·053
6SF5 6SF5GT	HIGH μ TRIODE	A.F. Amplifier	H	6·3	0·3	250	0·9	−2	—	—	1500	100	0·066
6SF7	DIODE REMOTE CUT-OFF R.F. PENTODE	Detector R.F. Amplifier	H	6·3	0·3	250	12·4	−1	100	3·3	2050	—	0·7
6SG7	MEDIUM CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·3	250	9·2	−2·5	150	3·4	4000	—	1·0
						250	11·8	−1	125	4·4	4700	—	0·9
						100	8·2	−1	100	3·2	4100	—	0·25

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	2·4	As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg.	30	S	H	A	D_2	D_1	—	H	K	—	G_2	—	6R7
		2·4	Plate Resistor 0·22 meg.													6R7G
		2·2	Cathode Resistor 13,000 Ω.		NC	H	A	D_2	D_1	—	H	K	—	G_1	—	6R7GT
		2·2	Gain = 12.													6R7GT/G
—	—	—	Cathode Resistor 320 Ω.	32	IC	K	IC	H	H	G_1	IC	IC	A	—	—	6S4
—	—	0·005	Mutual Conductance = 10 μmhos at — 38·5 volts bias.	30	S	H	A	G_2	G_2	—	H	K	—	G_1	—	6S7
		0·008			NC	H	A	G_2	G_2	—	H	K	—	G_1	—	6S7G
—	—	1·2	K_1 provides stream for D_2, D_3 and Triode Unit. K_2 provides stream for D_1. *For data as R.C. Amplifier refer type* 6SQ7.	30	D_3	K_1	D_1	D_3	K_2	A	H	H	—	G_1	—	6S8GT
—	—	0·06	Conversion Conductance = 2 μmhos at — 35 volts grid (G_3) bias.	30	S	H	A	G_3	G_1	K	H	G_3	—	—	—	6SA7
					G_5			G_4								
			Coupling Coil in Cathode Lead.													
		0·2	Osc. Grid (G_1) Current 0·5 mA.					G_3		K						6SA7GT
		0·2	Osc. Grid Resistor 20,000 Ω.		NC	H	A		G_1		H	G_3	—	—	—	6SA7GT/G
			Osc. G_m = 4500 μmhos.					G_4		G_5						
—	—	0·13	Osc. Grid (G_1) Resistor 20,000 Ω. Osc. Grid Current 0·35 mA. Conv. Conductance 3·5 μmhos. at — 20 volts grid (G_3) bias.	30	S	H	A	G_3	G_1	K	H	G_3	—	—	—	6SB7
					G_5			G_4								
—	—	2·0	Values are for each unit. As R.C. Phase Inverter (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Cathode Resistor 2980 Ω. Gain = 48.	30	S	A^{II}	G_1^{II}	G_1^{I}	A^{I}	K	H	H	—	—	—	6SQ7
—	—	2·4	As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·5 meg. Cathode Resistor 5400 Ω. Gain = 70.	30	S	K	G_1	—	A	—	H	H	—	—	—	6SF5
					NC	K	G_1	—	A	—	H	H	—	—	—	6SF5GT
—	—	0·004	Mutual Conductance = 10 μmhos at — 35 volts bias.	30	S	G_1	K	G_2	D	A	H	H	—	—	—	6SF7
—	—	0·003	G_m = 40 μmhos at — 17·5 volts bias. G_m = 40 μmhos at — 14·0 volts bias. G_m = 40 μmhos at — 11·5 volts bias.	30	S	H	K	G_1	K	G_2	H	A	—	—	—	6SQ7

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage	Current	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
6SH7	SHARP CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·3	250	10·8	−1	150	4·1	4900	—	0·9
						100	5·3	−1	100	2·1	4000	—	0·35
6SJ7 6SJ7GT	SHARP CUT-OFF PENTODE	R.F. and A.F. Amplifier (Pentode Connected)	H	6·3	0·3	250	3·0	−3	100	0·8	1650	—	> 1·0
		A.F. Amplifier (Triode Connected)				250	9·2	−8·5	—	—	2500	19	7600 Ohms.
6SK7 6SK7GT 6SK7GT/G	REMOTE CUT-OFF R F. PENTODE	R.F. Amplifier	H	6·3	0·3	250	9·2	−3	100	2·6	2000	—	0·8
6SL7GT	HIGH μ TWIN TRIODE	A.F. Amplifier	H	6·3	0·3	250	2·3	−2	—	—	1600	70	0·044
6SN7GT	TWIN TRIODE	A.F. Amplifier	H	6·3	0·6	250	9·0	−8	—	—	2600	20	7700 Ohms.
6SQ7 6SQ7GT 6SQ7GT/G	DUO-DIODE HIGH μ TRIODE	Detector A.F. Amplifier	H	6·3	0·3	250	0·9	−2	—	—	1100	100	0·091
6SR7 6SR7GT	DUO-DIODE TRIODE	Detector A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
6S37	REMOTE CUT-OFF R F. PENTODE	R.F. Amplifier	H	6·3	0·15	250	9·0	−3	100	2·0	1850	—	1·0
						100	12·2	−1	100	3·1	1930	—	0·12
6ST7	DUO-DIODE TRIODE	Detector A.F. Amplifier	H	6·3	0·15	250	9·5	−9	—	—	1900	16	8500 Ohms.
6SZ7	DUO-DIODE HIGH μ TRIODE	Detector A.F. Amplifier	H	6·3	0·15	250	1·0	−3	—	—	1200	70	0·0587
						100	0·8	−1	—	—	1150	70	0·061

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·003	I_a = 10 μA at − 5·5 volts bias.	30	S	H	K	G_1	K	G_2	H	A	—	—	—	**6SH7**
—	—		I_a = 10 μA at − 4·0 volts bias.													
—	—	0·005	For Pentode Connection. Plate Current = 10 μA at − 8 volts grid bias. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Screen Resistor 2·2 meg. Cathode Resistor 1410 Ω. Gain = 238.	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**6SJ7** **6SJ7GT**
—	—	0·003 0·005 0·005	Mutual Conductance = 10 μmhos at − 35 volts grid bias.	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**6SK7** **6SK7GT** **6SK7GT/G**
—	—	2·8	Values for each unit. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Cathode Resistor 6300 Ω. Gain = 50.	30	G_1^{II}	A^{II}	K^{II}	G_1^{I}	A^{I}	K^{I}	H	H	—	—	—	**6SL7GT**
—	—	3·8 (t_1) 4·0 (t_2)	Values for each unit. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Cathode Resistor 6950 Ω. Gain = 14.	30	G_1^{II}	A^{II}	K^{II}	G_1^{I}	A^{I}	K^{I}	H	H	—	—	—	**6SN7GT**
—	—	1·6 1·8 1·8	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Cathode Resistor 6100 Ω. Gain = 60.	30	S	G_1	K	D_2	D_1	A	H	H	—	—	—	**6SQ7** **6SQ7GT** **6SQ7GT/G**
★	★	2·4	★ *For data and notes refer type* 6BF6.	30	S	G_1	K	D_2	D_1	A	H	H	—	—	—	**6SR7** **6SR7GT**
—	—	0·001	Mutual Conductance = 10 μmhos at − 35 volts grid bias in each case.	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**6SS7**
—	—	1·5	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·22 meg. Cathode Resistor 13,000 Ω. Gain = 12.	30	S	G_1	K	D_2	D_1	A	H	H	—	—	—	**6ST7**
—	—	1·1	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Cathode Resistor 6300 Ω. Gain = 50.	30	S	G_1	K	D_2	D_1	A^1	H	H	—	—	—	**6SZ7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
6T7G	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·15	250	1·2	−3	—	—	1050	65	0·062
6T8	**TRIPLE DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·45	250 100	1·0 0·8	−3 −1	—	—	1200 1300	70 70	0·058 0·054
6U3	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	0·9	★	★	—	—	—	—	—	—
6U5 **6U5/6G5** **6U5G**	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·3	Target Volts 250	Target Current 4·0	−22 For Shadow Angle 0°	—	—	—	—	—
6U7G	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	8·2	−3	100	2·0	1600	—	0·8
6V4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	Max. R.M.S. 2 x 350	Max. D.C. Output 90·0	—	—	—	—	—	—
6V6 **6V6G**	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	6·3	0·45	250	Zero Signal 45·0 Max. Signal 47·0	−12·5	250	Zero Signal 4·5 Max. Signal 7·0	4100	—	0·052
6V6GT **6V6GT/G**		Class "AB_1" Power Amplifier				285	Zero Signal 70·0 Max. Signal 92·0	−19	285	Zero Signal 4·0 Max. Signal 13·5	3600	—	0·065
6W4GT	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	6·3	1·2	R.M.S. 350	D.C. Output 125·0	—	—	—	—	—	—
6W7G	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·15	250	2·0	−3	100	0·5	1225	—	1·5
6X2	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	6·3	0·08	Max. R.M.S. 5000	D.C. Output Average 3·0	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	1·7	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Cathode Resistor 6300 Ω. Gain = 50.	30	NC	H	A	D_2	D_1	—	H	K	—	G_1	—	6T7G
—	—	2·2	K_1 provides the stream for D_2. K_2 provides the stream for Triode D_1 and D_3.	32	D_3	D_2	K_1	H	H	D_1	K_2	G_1	A	—	—	6T8
—	—	—	★ *For data and notes refer type* 19X3.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	6U3
—	—	—	Triode Plate Resistor 1·0 meg.	17	H	A	G	T	K	H	—	—	—	—	—	6U5 / 6U5/6G5
			Triode Plate Current 0·24 mA.	30	NC	H	A	T	G	—	H	K	—	—	—	6U5G
—		0·007	Mutual Conductance = 2 μmhos at — 50 volts grid bias.	30	NC	H	A	G_2	G_3	—	H	K	—	G_1	—	6U7G
—	—	—	Condenser Input to Filter = 50 μF. maximum. Plate Supply Impedance per plate = 300 Ω minimum.	32	A[1]	NC	K	H	H	NC	A[II]	NC	NC	—	—	6V4
5000	4·5	0·3 for 6V6	Total Harmonic Distortion 8%.		S	H	A	G_2	G_1	—	H	K	—	—	—	6V6
8000 Plate to Plate	14·0	0·7 for 6V6G 6V6GT 6V6GT/G	Peak A.F. Grid to Grid Volts = 38. Total Harmonic Distortion 3·5%.	30	NC	H	A	G_2	G_1	—	H	K	—	—	—	6V6G / 6V6GT / 6V6GT/G
—	—	—	Condenser Input to Filter = 20 μF. Plate Supply Impedance = 145 Ω minimum.	30	NC	NC	K	—	A	—	H	H	—	—	—	6W4GT
—	—	0·007	As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Screen Resistor 2·9 meg. Cathode Resistor 2200 Ω. Gain = 200.	30	NC	H	A	G_2	G_3	—	H	K	—	G_1	—	6W7G
	—	—	Condenser Input to Filter = 0·1 μF. maximum. Plate Supply Impedance = 0·1 meg. minimum.	3	H K	H	A	—	—	—	—	—	—	—	—	6X

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
6X4	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	H	6·3	0·6	R.M.S. 2 x 325	D.C. Output 70·0	—	—	—	—	—	—
6X5 6X5G 6X5GT 6X5GT/G	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	Max. R.M.S. 2 x 325	D.C. Output 70·0 Max.	—	—	—	—	—	—
6Y6G **6Y6GT**	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	6·3	1·25	200	Zero Signal 61·0 Max. Signal 66·0	−14	135	Zero Signal 2·2 Max. Signal 9·0	7100	—	0·0183
6Z7G	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	H	6·3	0·3	180	2 x 4·2 Zero Signal	0	—	—	—	—	-
6ZY5G	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	H	6·3	0·3	Max. R.M.S. 2 x 325	D.C. Output 40·0 Max.	—	—	—	—	—	—
7A4	**DETECTOR TRIODE**	A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
7A5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	6·3	0·75	125 110	44·0 40·0	−9 −7·5	125 110	3·3 3·0	6000 5800	— —	0·017 0·014
7A6	**TWIN DIODE**	Detector, Rectifier	H	6·3	0·15	Max. R.M.S. 150	D.C. Output 8·0 Max.	-	—	—	—	—	—
7A7	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
7A8	**OCTODE**	Frequency Converter	H	6·3	0·15	250	3·0	(G_4) −3	(G_{2+4}) 100	3·2	Conv. 550	—	0·7
7AD7	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·6	300	28	See Note	150	7·0	9500	—	0·3

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	With less than 4 μF. condenser input to filter, minimum plate supply impedance = 150 Ω per plate. Greater Supply Impedances required for larger input capacities.	21	A^I	NC	H	H	NC	A^{II}	K	—	—	—	—	**6X4**
—	—	—	Condenser Input to Filter = 4 μF. Maximum. Plate Supply Impedance per plate = 150 Ω minimum.	30	S NC	H H	A^{II} A^{II}	—	A^I A^I	—	H H	K K	—	—	—	**6X5** **6X5G** **6X5GT** **6X5GT/G**
2600	6·0	0·7	Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_2	—	—	—	**6Y6G** **6Y6GT**
Plate to Plate 12000	4·2	—	Peak Plate Current = 60·0 mA. per plate. Average Input of 320 mW. applied between grids.	30	NC	H	A^{II}	G_1^{II}	G_1^I	A^I	H	K	—	—	—	**6Z7G**
—			With less than 40 μF. condenser input to filter, minimum plate supply impedance = 225 Ω per plate. Greater Supply Impedances required for larger input capacities.	30	NC	H	A^{II}	—	A^I	—	H	K	—	—	—	**6ZY5G**
—	—	4·0	★ *For data and notes refer type* 6J5GT.	29	H	A	NC	NC	IC	G_1	K	H	—	—	S	**7A4**
2700 2500	2·2 1·5	—	Total Harmonic Distortion 10%, in each case.	29	H	A	G_2	NC	NC	G_1	K	H	—	—	S	**7A5**
—	—	—	Values for each diode.	29	H	K^{II}	D_2	NC	IS	D_1	K^I	H	—	—	S	**7A6**
–	—	0·005	★ *For data and notes refer type* 6SK7GT.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7A7**
–	—	0·15	Conversion conductance = 2 μmhos at — 30 volts grid (G_4) bias. Grid No. 2 current 4·2 mA. through 20,000 Ω (250 volts supply). Osc. Grid (G_1) current 0·4 mA. Osc. Grid Resistor 50,000 Ω.	29	H	A	G_2	G_1	G_3 G_5	G_4	K	H	—	—	S	**7A8**
	—	0·03	Cathode Bias Resistor = 68 Ω.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7AD7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
7AF7	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·3	250 100 100	9·0 5·0 10·8	See Note*	—	—	2100 1900 2600	16 16 17	7600 Ohms. 8400 Ohms. 6500 Ohms.
7AG7	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	250	6·0	See Note	250	2·0	4200	—	0·75
7AH7	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	250	6·8	See Note	250	1·9	3300	—	1·0
7B4	**HIGH μ TRIODE**	A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
7B5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·4	★	★	★	★	★	★	—	★
7B6	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
7B7	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	250	8·5	−3	100	1·7	1750	1200	0·75
7B8	**PENTAGRID**	Frequency Converter	H	6·3	0·3	★	★	★	★	★	★	—	★
7C4	**U.H.F. DIODE**	Detector, Rectifier	H	6·3	0·15	Max. 117	Max. D.C. Output 5·0	—	—	—	—	—	—
7C5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	6·3	0·45	★	★	★	★	★	★	—	★
7C6	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·15	250	1·3	−1	—	—	1000	100	0·1
7C7	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·15	250	2·0	−3	100	0·5	1300	—	2·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— — —	— — —	2·3	Cathode Bias Resistor 1100 Ω. Cathode Bias Resistor 600 Ω. Cathode Bias Resistor 0 Ω.	29	H	K^{II}	A^{II}	$G_1{}^{II}$	$G_1{}^{I}$	A^{I}	K^{I}	H	—	—	S	**7AF7**
—	—	0·005	Cathode Bias Resistor 250 Ω. Plate Current = 10 μA at — 10 volts Grid Bias.	29	H	A	G_2	G_2	IS	G_1	K	H	—	—	S	**7AG7**
—	—	0·005	Cathode Bias Resistor 250 Ω. G_m = 35 μmhos at — 20 volts Grid Bias.	29	H	A	G_2	G_2	IS	G_1	K	H	—	—	S	**7AH7**
—	—	2·4	★ *For data and notes refer type* 6SF5GT.	29	H	A	NC	NC	NC	G_1	K	H	—	—	S	**7B4**
★	★	0·8	★ *For data and notes refer type* 6K6GT.	29	H	A	G_2	NC	NC	G_1	K G_3	H	—	—	S	**7B5**
—	—	1·6	★ *For data and notes refer type* 6SQ7GT.	29	H	A	G_1	IC	D_2	D_1	K IS	H	—	—	S	**7B6**
—	—	0·007	Mutual Conductance = 10 μmhos at — 40 volts Grid Bias.	29	H	A	G_2	G_2	IS	G_1	K	H	—	—	S	**7B7**
—	—	0·2	★ *For data and notes refer type* 6A8GT.	29	H	A	G_2	G_1	G_3 G_5	G_4	K	H	—	—	S	**7B8**
—	—	—		29	H	NC	NC	A	NC	NC	K	H	—	—	S	**7C4**
★	★	0·4	★ *For data and notes refer type* 6V6GT.	29	H	A	G_2	NC	NC	G_1	K G_3	H	—	—	S	**7C5**
—	—	1·4	As R.C. Amplifier (250 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Cathode Resistor 4700 Ω. Gain = 65.	29	H	A	G_1	K	D_2	D_1	K	H	—	—	S	**7C6**
	—	0·007	As R.C. Amplifier (250 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Screen Resistor 2·2 meg. Cathode Resistor 1500 Ω. Gain = 245. Mutual Conductance = 75 μmhos at — 7 volts Grid Bias.	29	H	A	G_2	G_2	IS	G_1	K	H	—	—	S	**7C7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
7E6	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
7E7	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·3	250	7·5	−3	100	1·6	1300	—	0·7
7F7	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
7F8	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·3	250	6·0	See Note	—	—	3300	48	0·0145
7Q7 7Q7/ 1232	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·45	250	6·0	−2	100	2·0	4500	—	0·8
7H7	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	10	See Note	150	3·2	4200	—	0·8
7J7	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·3	250	1·4	−3	100	2·8	Conv. 290	—	1·5
7K7	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	250	2·3	−2	—	—	1600	70	0·044
7L7	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	4·5	−1·5	100	1·5	3100	—	1·0
7N7	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·6	★	★	★	—	—	★	★	★
7Q7	**PENTAGRID**	Frequency Converter	H	6·3	0·3	250	3·5	(G_3) −2	(G_{2+4}) 100	8·5	Conv. 550	—	1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
★	★	1·5	★ *For data and notes refer type* 6BF6. *For replacement, consider also type* 6SR7GT.	29	H	A	G_1	IC	D_2	D_1	K	H	—	—	S	**7E6**
—	—	0·005	Mutual Conductance = 2 µmhos at − 42·5 volts Grid Bias.	29	H	A	D_2	D_1	G_2	G_1	K G_3	H	—	—	S	**7E7**
—	—	1·6	★ *For data and notes refer type* 6SL7GT.	29	H	K^{II}	A^{II}	G_1^{II}	G_1^{I}	A^{I}	K^{I}	H	—	—	S	**7F7**
—	—	1·2	Cathode Bias Resistor 500 Ω. Values for each unit. As R.C. Amplifier (125 V. supply). Following Grid Leak 0·47 meg. Plate Resistor 0·27 meg. Cathode Resistor 2200 Ω. Gain = 36.	29	G_1^{II}	H	A^{II}	K^{II}	K^{I}	A	H	G_1^{I}	—	—	S	**7F8**
—	—	0·007	Cathode Current Cut-off at − 7 volts Grid Bias.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7G7** **7G7/1232**
—	—	0·007	Cathode Bias Resistor 180 Ω. Mutual Conductance = 35 µmhos at − 19 volts Grid Bias.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7H7**
—	—	0·03	Osc. Plate Current 5 mA. through 20,000 Ω (250 volts supply). Osc. Grid Current 0·4 mA. Osc. Grid Resistor 50,000 Ω. Osc. G_m = 1400 µmhos. Conversion Conductance = 2 µmhos at − 20 volts Grid Bias.	29	H	A^h	A^t	G_1^t G_3^h	G_2^h G_4^h	G_1^h	K G_5^h IS	H	—	—	S	**7J7**
—	—	1·7	K_1 Triode Cathode. K_2 Diode Cathode. *For data as R.C. Amplifier refer type* 6SL7GT.	29	H	K_1	A	G_1	D_2	D_1	K_2	H	—	—	S	**7K7**
—	—	0·01	Plate Current Cut-off at − 6 volts Grid Bias.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7L7**
—	—	3·0	★ *For data and notes refer type* 6SN7GT.	29	H	K^{II}	A^{II}	G_1^{II}	G_1^{I}	A^{I}	K^{I}	H	—	—	S	**7N7**
—	—	0·2	Coupling Coil in Cathode Lead. Osc. Grid (G_1) Current = 0·5 mA. Osc. Grid Resistor 20,000 Ω. Osc. G_m 4500 µmhos. Conversion Conductance = 2 µmhos at − 35 volts Grid (G_3) Bias.	29	H	A	G_2 G_4	G_1	G_3	G_2	K	H	—	—	S	**7Q7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
7R7	**DUO-DIODE MEDIUM CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	6·3	0·3	250	6·2	−1	100	1·6	3400	—	1·0
7S7	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·3	250	1·8	−2	100	3·0	Conv. 525	—	1·25
7V7	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·45	300	10·0	See Note	See Note	3·9	5800	—	0·3
7W7	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·45	★	★	★	★	★	★	—	★
7X7	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	250 100	1·9 1·2	−1 0	— —	— —	1500 1000	100 85	0·067 0·085
7Y4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·9	Max. R.M.S. 2 x 325	D.C. Output 70·0 Max.	—	—	—	—	—	—
7Z4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·9	Max. R.M.S. 2 x 325	D.C. Output 100·0	—	—	—	—	—	—
8D3	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
10	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	7·5	1·25	425	18·0	−40	—	—	1600	8	5000 Ohms.
11	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier and Biased Detector	F	1·1	0·25	135	3·0	−10·5	—	—	440	6·6	0·015

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·004	As R.C. Amplifier (250 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Screen Resistor 1·8 meg. Cathode Resistor 1800 Ω. Gain = 255. Mutual Conductance = 2 μmhos at — 20 volts Grid Bias.	29	H	A	D_2	D_1	G_2	G_1	K G_3	H	—	—	S	**7R7**
—	—	0·03	Osc. Plate Current 5·0 mA through 20,000 Ω (250 volts supply). Osc. Grid Current 0·4 mA. Osc. Grid Resistor 50,000 Ω. Osc. G_m = 1650 μmhos. Conversion Conductance = 2 μmhos at — 21 volts Grid Bias.	29	H	A^h	A^t	$G_1{}^t$ $G_3{}^h$	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	K $G_5{}^h$ IS	H	—	—	S	**7S7**
—	—	0·004	Cathode Bias Resistor 160 Ω. Series Screen Resistor 40,000 Ω (300 volts supply). I_a = 10 μA at — 16 volts Grid Bias.	29	H	A	G_2	G_2	IS	G_1	K	H	—	—	S	**7V7**
—	—	0·0025	★ *For data and notes refer type* 7V7.	29	H	A	G_2	K	G_3 IS	G_1	K	H	—	—	S	**7W7**
— —	— —	—	K_1 provides the stream for Triode and D_1. K_2 provides the stream for D_2.	29	H	A	G_1	K_1 IS	D_1	D_2	K_2	H	—	—	S	**7X7**
—	—	—	With less than 40 μF Condenser Input to Filter, minimum Plate Supply Impedance per Plate = 150 ohms. Greater Supply Impedances are required for larger Input Capacities.	29	H	NC	A^{II}	NC	NC	A^I	K	H	—	—	S	**7Y4**
—	—	—	With less than 40 μF condenser input to filter, minimum plate supply impedance per plate = 75 ohms. Greater supply impedances are required for larger input capacities.	29	H	NC	A^{II}	NC	NC	A^I	K	H	—	—	S	**7Z4**
—	—	0·005	★ *For data and notes refer type* 6AM6.	21	G_1	K	H	H	A	G_3 S	G_2	—	—	—	—	**8D3**
10,200	1·6	7·0	Second Harmonic Distortion 5%.	8	F	A	G_1	F	—	—	—	—	—	—	—	**10**
	—	3·3	As Biased Detector adjust zero signal plate current to 0·2 mA. Plate volts = 135 volts, max. Grid Bias — 18 volts, approx.	5	F+	A	F−	G_1	—	—	—	—	—	—	—	**11**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance μmhos	Amplification factor	Plate resistance Meg-ohms
			TYPE	Voltage Volts	Current Amps								
12	DETECTOR AMPLIFIER TRIODE	A.F. Amplifier and Biased Detector	F	1·1	0·25	★	★	★	—	—	★	★	★
12A	DETECTOR AMPLIFIER TRIODE	Class "A" Power Amplifier and Biased Detector	F	5·0	0·25	135 180	6·2 7·7	−9 −13·5	— —	— —	1650 1800	8·5 8·5	5100Ω 4700Ω
12A5	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	12·6 6·3	0·3 0·6	180	Zero Signal 45 Max. Signal 48	−25	180	Zero Signal 8·0 Max. Signal 14·0	2400	—	0·035
12A7	RECTIFIER POWER OUTPUT PENTODE	Half-wave Rectifier	H	12·6	0·3	Max. R.M.S. 125	D.C. Output 30 Max.	—	—	—	—	—	—
		Class "A" Power Amplifier				135	9·0	−13·5	135	2·5	975	—	0·102
12A8G 12A8GT 12A8GT/G	PENTAGRID	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
12AH7GT	TWIN TRIODE	A.F. Amplifier	H	12·6	0·15	180	7·6	−6·5	—	—	1900	16	8400 Ohms
12AL5	TWIN DIODE	Detector, Rectifier	H	12·6	0·15	R.M.S. 117 per Plate	D.C. Output 9·0 per Plate	—	—	—	—	—	—
12AT6	DUO-DIODE HIGH μ TRIODE	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12AT7	HIGH μ TWIN TRIODE	R.F. Amplifier	H	12·6 6·3	0·15 0·3	250 180 100	10·0 11·0 3·0	−2 −1 −1	— — —	— — —	5000 6600 3500	60 62 58	— — —
12AU6	SHARP CUT-OFF PENTODE	R.F. and A.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12AU7	TWIN TRIODE	A.F. Amplifier	H	12·6 6·3	0·15 0·3	250 100	10·5 11·8	−8·5 0	— —	— —	2200 3100	17·0 19·5	7700Ω 6250Ω

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	3·3	★ *For data and notes refer type* 11.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	**12**
9000 10,650	0·13 0·285	8·5	As Biased Detector adjust zero signal plate current to 0·2 mA. Plate Volts = 180 volts. Grid Bias — 21 volts, approx.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	**12A**
3300	3·4	—	Total Harmonic Distortion 11%. Second Harmonic Distortion 6·5%. Third Harmonic Distortion 8%.	19	H	A	G_2	G_1	K	H_t	H	—	—	—	—	**12A5**
—	—	—	Condenser input to filter.	19	H	A^p	$G_2{}^p$	K^r	A^r	K^p	H	—	—	$G_1{}^p$	—	**12A7**
13,500	0·55	—														
—	—	0·26	★ *For data and notes refer type* 6A8GT.	30	S	H	A	G_3 G_5	G_1	G_2	H	K	—	G_4	—	**12A8G** **12A8GT** **12A8GT/G**
—	—	$3·0_{t1}$ $2·2_{t2}$	Values are for each unit.	30	$G_1{}^{II}$	K^{II}	A^{II}	K^I	$G_1{}^I$	A^I	H	H	—	—	—	**12AH7GT**
—	—	—	Plate Supply Impedance per plate = 300 Ω, min. In Half-wave service the two units may be used separately or in parallel.	21	K^I	A^{II}	H	H	K^{II}	IS	A^I	—	—	—	—	**12AL5**
—	—	2·1	★ *For data and notes refer type* 6AT6.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**12AT6**
— — —	— — —	★	Values for each unit. ★ As grounded grid amplifier plate to cathode capacity = 0·18 μμF. As grounded cathode amplifier grid to plate capacity = 1·7 μμF.	32	A^{II}	$G_1{}^{II}$	K^{II}	H	H	A^I	G_1	K^I	H_t	—	—	**12AT7**
—	—	0·0035	★ *For data and notes refer type* 6AU6.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**12AU6**
— —	— —	1·5	Values for each unit. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·22 meg. Cathode Resistor 11,000 Ω. Gain = 12.	32	A^{II}	$G_1{}^{II}$	K^{II}	H	H	A^I	$G_1{}^I$	K^I	H_t	—	—	**12AU7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
12AV6	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12AW6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	250	7·0	See Note	150	2·0	5000	—	0·8
12AX7 ●	**HIGH μ TWIN TRIODE**	A.F. Amplifier	H	12·6 6·3	0·15 0·3	250 100	1·2 0·5	−2 −1	— —	— —	1600 1250	100 100	0·625 0·08
12B8GT	**TRIODE REMOTE CUT-OFF PENTODE**	A.F. and R.F. Amplifier	H	12·6	0·3	90 90	2·8 7·0	0 −3	— 90	— 2·0	2400 1800	90 —	0·037 0·2
12BA6	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12BA7	**PENTAGRID**	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
12BD6	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12BE6	**PENTAGRID**	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
12C8	**DUO-DIODE MEDIUM CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12F5GT	**HIGH μ TRIODE**	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12H6	**TWIN DIODE**	Detector Rectifier	H	12·6	0·15	★	★	—	—	—	—	—	—
12J5GT	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12J7G 12J7GT 12J7GT/G	**SHARP CUT-OFF PENTODE**	A.F. and R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12K7G 12K7GT 12K7GT/G	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	★ *For data and notes refer type* 6AV6.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**12AV6**
—	—	0·025	Cathode Bias Resistor 200 Ω. Plate Current = 10 µA at — 8 volts Grid Bias.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**12AW6**
— —	— —	1·7	Values for each unit. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Cathode Resistor 5200 Ω. Gain = 73.	32	A^{II}	$G_1{}^{I}$	K^{II}	H	H	A^{I}	$G_1{}^{I}$	K^{I}	H_t	—	—	**12AX7**
— —	— —	2·3 0·15	Triode Unit. Pentode Unit. Mutual Conductance = 2 µmhos at — 42·5 volts Grid Bias.	30	K^{p}	H	A^{p}	$G_2{}^{p}$	A^{t}	K^{t}	H	$G_1{}^{t}$	—	$G_1{}^{p}$	—	**12B8GT**
—	—	0·0035	★ *For data and notes refer type* 6BA6.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**12BA6**
—	—	0·19	★ *For data and notes refer type* 6BA7.	32	G_2 G_4	G_1	K	H	H	G_5 IS	G_3	IS	A	—	—	**12BA7**
—	—	0·005	★ *For data and notes refer type* 6BD6.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**12BD6**
—	—	0·3	★ *For data and notes refer type* 6BE6.	21	G_1	K G_5	H	H	A	G_2 G_4	G_3	—	—	—	—	**12BE6**
—	— —	0·005	★ *For data and notes refer type* 6B8.	30	S	H	A	D_2	D_1	G_2	H	K	—	G_1	—	**12C8**
—	—	2·8	★ *For data and notes refer type* 6F5GT.	30	NC	H	NC	A	NC	—	H	K	—	G_1	—	**12F5GT**
—	—	—	★ *For data and notes refer type* 6H6.	30	S	H	A^{II}	K^{II}	A^{I}	—	H	K^{I}	—	—	—	**12H6**
—	—	—	★ *For data and notes refer type* 6J5GT.	30	NC	H	A	—	G_1	—	H	K	—	—	—	**12J5GT**
—	—	0·007 0·005 0·005	★ *For data and notes refer type* 6J7G, 6J7GT *and* 6J7GT/G, respectively.	30	S	H	A	G_2	G_3	—	H	K	—	G_1	—	**12J7G 12J7GT 12J7GT/G**
—	—	0·007 0·005 0·005	★ *For data and notes refer type* 6K7GT.	30	S	H	A	G_2	G_3	—	H	K	—	G_1	—	**12K7G 12K7GT 12K7GT/G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
12K8 12K8G 12K8GT	TRIODE HEXODE	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
12L8GT	TWIN POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	12·6	0·15	180	Zero Signal 13·0 Max. Signal 13·5	−9	180	Zero Signal 2·8 Max. Signal 4·6	2150	—	0·16
12Q7G 12Q7GT 12Q7GT/G	DUO-DIODE HIGH μ TRIODE	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12S8GT	TRIPLE DIODE HIGH μ TRIODE	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12SA7 12SA7GT 12SA7GT/G	PENTAGRID	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
12SC7	TWIN TRIODE	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12SF5 12SF5GT	HIGH μ TRIODE	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12SF7	DIODE REMOTE CUT-OFF R.F. PENTODE	Detector R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12SG7	MEDIUM CUT-OFF R.F. PENTODE	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12SH7	SHARP CUT-OFF R.F. PENTODE	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12SJ7 12SJ7GT	SHARP CUT-OFF PENTODE	R.F. and A.F. Amplifier (Pentode connected A.F. Amplifier (Triode connected)	H	12·6	0·15	★	★	★	★	★	★	★	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·03	★ *For data and notes refer types* 6K8 *and* 6K8GT *respectively.*	30	S	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$ $G_1{}^t$	A^t	H	K	—	$G_3{}^h$	—	12K8
		0·08			NC	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$ $G_1{}^t$	A^t	H	K	—	$G_3{}^h$	—	12K8G
		0·08			S	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$ $G_1{}^t$	A^t	H	K	—	$G_3{}^h$	—	12K8GT
10,000	1·0	0·7	Values for each unit. Total Harmonic Distortion 10%.	30	$G_1{}^I$	K G_3	$G_1{}^{II}$	A^{II}	$G_2{}^I$ $G_2{}^{II}$	H	H	A^I	—	—	—	12L8GT
—	—	1·5	★ *For data and notes refer types* 6Q7G *and* 6Q7GT.	30	S	H	A	D_2	D_1	—	H	K	—	G_1	—	12Q7G
		1·6														12Q7GT
		1·6														12Q7GT/G
—	—	1·2	★ *For data and notes refer type* 6S8GT.	30	D_3	K_1	D_1	D_2	K_2	A	H	H	—	G_1	—	12S8GT
—	—	9·5	★ *For data and notes refer types* 6SA7 *and* 6SA7GT *respectively.*	30	S G_5	H	A	G_2 G_4	G_1	K	H	G_3	—	—	—	12SA7
		11·0			NC	H	A	G_2	G_1	K	H	G_3	—	—	—	12SA7GT
		11·0						G_4		G_5					—	12SA7GT/G
—	—	2·0	★ *For data and notes refer type* 6SC7.	30	S	A^{II}	$G_1{}^{II}$	$G_1{}^I$	A^I	K	H	H	—	—	—	12SC7
—	—	2·4	★ *For data and notes refer types* 6SF5 *and* 6SF5GT *respectively.*	30	S	K	G_1	—	A	—	H	H	—	—	—	12SF5
					NC	K	G_1	—	A	—	H	H	—	—	—	12SF5GT
—	—	0·004	★ *For data and notes refer type* 6SF7.	30	S	G_1	K	G_2	D	A	H	H	—	—	—	12SF7
—	—	0·003	★ *For data and notes refer type* 6SG7.	30	S	H	K	G_1	K	G_2	H	A	—		—	12SG7
—	—	0·003	★ *For data and notes refer type* 6SH7.	30	S	H	K	G_1	K	G_2	H	A	—	—	—	12SH7
—	—	0·005	★ *For data and notes refer types* 6SJ7 *and* 6SJ7GT *respectively.*	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	12SJ7
																12SJ7GT

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
12SK7 12SK7GT 12SK7GT/G	REMOTE CUT-OFF R.F. PENTODE	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12SL7GT	HIGH μ TWIN TRIODE	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12SN7GT	TWIN TRIODE	A.F. Amplifier	H	12·6	0·3	★	★	★	—	—	★	★	★
12SQ7 12SQ7GT	DUO-DIODE HIGH μ TRIODE	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12SR7	DUO-DIODE TRIODE	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12Z3	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier	H	12·6	0·3	Max. R.M.S. 235	Max. D.C. Output 55	—	—	—	—	—	—
14A4	DETECTOR AMPLIFIER TRIODE	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
14A5	BEAM POWER OUTPUT TETRODE	Class "A" Power Amplifier	H	12·6	0·15	250	Zero Signal 30 Max. Signal 32	−12·5	250	Zero Signal 3·5 Max. Signal 5·5	3000	—	0·07
14A7 14A7/12B7	REMOTE CUT-OFF R.F. PENTODE	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
14AF7	TWIN TRIODE	A.F. Amplifier	H	12·6	0·15	250	9·0	See Note	—	—	2100	16	7600 Ohms
14B6	DUO-DIODE HIGH μ TRIODE	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
14B8	PENTAGRID	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·003 0·005 0·005	★ *For data and notes refer types* 6SK7 *and* 6SK7GT *respectively.*	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**12SK7** **12SK7GT** **12SK7GT/G**
—	—	2·8	★ *For data and notes refer type* 6SL7GT.	30	G_1''	A''	K''	G_1'	A'	K'	H	H	—	—	—	**12SL7GT**
—	—	3·8 t_1 4·0 t_2	★ *For data and notes refer type* 6SN7GT.	30	G_1''	A''	K''	G_1'	A'	K'	H	H	—	—	—	**12SN7GT**
—	—	1·6 1·8	★ *For data and notes refer types* 6SQ7 *and* 6SQ7GT *respectively.*	30	S	G_1	K	D_2	D_1	A	H	H	—	—	—	**12SQ7** **12SQ7GT**
—	—	2·4	★ *For data and notes refer type* 6BF6.	30	S	G_1	K	D_2	D_1	A	H	H	—	—	—	**12SR7**
—	—	—	With less than 40 μF Condenser Input to Filter, minimum plate supply impedance = 75 ohms. Greater Supply Impedances are required for larger Input capacities.	8	H	A	K	H	—	—	—	—	—	—	—	**12Z3**
—	—	4·0	★ *For data and notes refer type* 6J5GT. *For replacement, consider also type* 7A4.	29	H	A	NC	NC	IC	G_1	K	H	—	—	S	**14A4**
7500	2·8	0·4	Total Harmonic Distortion = 7%. For Automatic Bias Cathode Resistor 370 Ω.	29	H	A	G_2	NC	NC	G_1	K G_2	H	—	—	S	**14A5**
—	—	0·005	★ *For data and notes refer type* 6SK7GT. *For replacement, consider also type* 12SK7GT.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**14A7** **14A7/12B7**
—	—	2·3	Values for each unit. Cathode Bias Resistor 1100 Ω.	29	H	K''	A''	G_1''	G_1'	A'	K'	H	—	—	S	**14AF7**
—	—	1·6	★ *For data and notes refer type* 6SQ7GT. *For replacement, consider also* 7B6 *and* 12SQ7GT.	29	H	A	G_1	IC	D_2	D_1	K IS	H	—	—	S	**14B6**
—	—	0·2	★ *For data and notes refer type* 6A8GT. *For replacement, consider also types* 7B8 *and* 12A8GT.	29	H	A	G_2	G_1	G_3 G_5	G_4	K	H	—	—	S	**14B8**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
14C5	BEAM POWER OUTPUT TETRODE	Class "A" Power Amplifier — Class "AB_1" Power Amplifier	H	12·6	0·225	★	★	★	★	★	★	—	★
14C7	SHARP CUT-OFF R.F. PENTODE	R.F. Amp'ifier	H	12·6	0·15	250	2·2	−3	100	0·7	1575	—	>1·0
14E6	DUO-DIODE TRIODE	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
14E7	DUO-DIODE REMOTE CUT-OFF R.F. PENTODE	Detector R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
14F7	TWIN TRIODE	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
14F8	TWIN TRIODE	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
14H7	MEDIUM CUT-OFF R.F. PENTODE	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
14J7	TRIODE HEPTODE	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
14N7	TWIN TRIODE	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
14Q7	PENTAGRID	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
14R7	DUO-DIODE MEDIUM CUT-OFF PENTODE	Detector A.F. and R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
15	R.F. PENTODE	R.F. Amplifier	H	2·0	0·22	135	1·85	−1·5	67·5	0·3	750	—	0·8
15A6	VIDEO OUTPUT PENTODE	Video Amplifier	H	15·0	0·3	180	36	−2·9	180	4·0	10,000	—	0·1

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C	B.S	TYPE No.
★	★	0·4	★ *For data and notes refer type* 6V6GT. *For replacement, consider also type* 7C5.	29	H	A	G_2	NC	NC	G_1	K G_3	H	—	—	S	**14C5**
—	—	0·007	Cathode Current Cut-off at — 7 volts Grid Bias.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**14C7**
★	★	1·5	★ *For data and notes refer type* 6BF6. *For replacement, consider also types* 7E6 *and* 12SR7.	29	H	A	G_1	IC	D_2	D_1	K	H	—	—	S	**14E6**
—	—	0·005	★ *For data and notes refer type* 7E7.	29	H	A	D_2	D_1	G_2	G_1	K G_3	H	—	—	S	**14E7**
—	—	1·6	★ *For data and notes refer type* 6SL7GT. *For replacement, consider also types* 7F7 *and* 12SL7GT.	29	H	K^{II}	A^{II}	G_1^{II}	G_2^{I}	A^{I}	K^{I}	H	—	—	S	**14F7**
	—	1·2	★ *For data and notes refer type* 7F8.	29	G_1^{II}	H	A^{II}	K^{II}	K^{I}	A^{I}	H	G_1^{I}	—	—	S	**14F8**
—	—	0·007	★ *For data and notes refer type* 7H7.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**14H7**
	—	0·03	★ *For data and notes refer type* 7J7.	29	H	A^h	A^t	G_1^t G_3^h	G_2^h G_4^h	G_1^h	K G_3^h IS	H	—	—	S	**14J7**
	—	3·0	★ *For data and notes refer type* 6SN7GT. *For replacement consider also types* 7N7 *and* 12SN7GT.	29	H	K^{II}	A^{II}	G_1^{II}	G_1^{I}	A^{I}	K^{I}	H	—	—	S	**14N7**
	—	0·2	★ *For data and notes refer type* 7Q7.	29	H	A	G_3 G_4	G_1	G_5	G_2	K	H	—	—	S	**14Q7**
—	—	0·004	★ *For data and notes refer type* 7R7.	29	H	A	D_2	D_1	G_2	G_1	K G_3	H	—	—	S	**14R7**
	—	0·01		15	H	A	G_2	K G_3	H	—	—	—	—	G_1	—	**15**
	—	0·1		32	G_2	G_1	K	H	H	G_3	A	S	NC	—	—	**15A6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
16A5	**POWER OUTPUT PENTODE**	Frame Output Amplifier —— Class "A" Power Amplifier	H	16·5	0·3	200	45	−13·9	See Note	8·5	8000	—	0·024
17Z3	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	17·0	0·3	Peak Inverse 4500 Max. *	Average 150 Peak 450 Max.	—	—	—	—	—	—
19	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	F	2·0	0·26	★	★	★	—	—	—	—	—
19J6	**TWIN TRIODE**	R.F. Amplifier	H	18·9	0·15	100	8·5	See Note	—	—	5300	38	7100 Ohms
19T8	**TRIPLE DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	18·9	0·15	★	★	★	—	—	★	★	★
19X3	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	19·0	0·3	Peak Inverse 4000 Max. ★	Average 180 Peak 360 Max.	—	—	—	—	—	—
19Y3	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	19·0	0·3	Max. R.M.S. 250	D.C. Output 180 Max.	—	—	—	—	—	—
20	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	8·3	0·132	135	6·5	−22·5	—	—	525	3·3	6300 Ohms
20AV	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	150	0·01	—	—	—	—	—	—
20CG	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	90	0·005	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
4000	4·2	0·1	Total Harmonic Distortion 10%. Series screen resistor 680 Ω (200 V. supply). In the frame output application the circuit should be designed around a peak plate current not exceeding 90 mA at plate voltage = 50 V. (screen volts 170 V.) or 120 mA at plate voltage = 60 V. (screen volts 200 V.).	32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—	—	**16A5**
—	—	—	* Pulse duration 15 μsecs. max.	32	IC	IC	IC	F	F	IC	IC	IC	A	K	—	**17Z3**
★	★	—	★ *For data and notes refer type* 1J6G.	17	F+	A^{II}	G_1^{II}	G_1^{I}	A^{I}	F−	—	—	—	—	—	**19**
—	—	1·5	Values for each unit. Cathode Resistor 50 Ω.	21	A^{II}	A^{I}	H	H	G_1^{I}	G_1^{II}	K	—	—	—	—	**19J6**
—	—	2·2	★ *For data and notes refer type* 6T8.	32	D_3	D_2	K_1	H	H	D_1	K_2	G_1	A	—	—	**19T8**
—	—	—	★ Pulse duration 15% of one cycle with maximum of 15 μsecs. Minimum line frequency = 10 Kc/s.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**19X3**
—	—	—	Condenser input to filter 60 μF maximum. Plate supply impedance = 100 Ω minimum.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**19Y3**
6500	0·11	4·1		8	F+	A	G_1	F−	—	—	—	—	—	—	—	**20**
—	—	—	For daylight and bluish light Sensitivity = 45 μA/Lumen at 2700° K. Dark current 0·05 μA at 150 v. Caesium-Antimony Cathode.	30	NC	A	NC	K	NC	A	NC	NC	—	—	—	**20AV**
	—	—	For incandescent light and near infra-red Sensitivity = 150 μA/Lumen at 2700° K. Dark current at 90 v. = 0·1 μA. Gas amplification factor = 10 max. Caesium on Oxidised Silver Cathode.	30	NC	K	NC	NC	NC	K	NC	A	—	—	—	**20CG**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage	Current	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
20CV	VACUUM PHOTO-ELECTRIC CELL	P.E. Cell	P E	—	—	100	0·01	—	—	—	—	—	—
21A6	LINE OUTPUT PENTODE	Line Output Amplifier	H	21·5	0·3	180	45	−23	180	3·0	6500	—	—
		Class "B" Power Amplifier (two valves)				200	Zero Signal 2 x 25 Max. Signal 2 x 87	−31·5	200 See Note	Zero Signal 2 x 2·0 Max. Signal 2 x 12·5	—	—	—
22	R.F. TETRODE	R.F. Amplifier	F	3·3	0·132	135	3·7	−1·5	67·5	1·3	500	—	0·325
24A	R.F. TETRODE	R.F. Amplifier	H	2·5	1·75	250	4·0	−3	90	1·7	1050	—	0·6
25A6 25A6G 25A6GT 25A6GT/G	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	25·0	0·3	160	Zero Signal 33·0 Max. Signal 36·0	−18	120	Zero Signal 6·5 Max. Signal 12·0	2375	—	0·042
25A7G 25A7GT 25A7GT/G	RECTIFIER POWER OUTPUT PENTODE	Half-wave Rectifier	H	25·0	0·3	R.M.S. 117	D.C. Output 75 Max.	—			—	—	
		Class "A" Power Amplifier				100	Zero Signal 20·5	−15	100	Zero Signal 4·0	1800	—	0·05
25AC5G 25AC5GT 25AC5GT/G	HIGH μ POWER OUTPUT TRIODE	Class "B" Power Amplifier (two valves)	H	25·0	0·3	180	Zero Signal 4·0	0			—	—	—
25B6G	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	25·0	0·3	200	Zero Signal 62·0 Max. Signal 71·0	−23	135	Zero Signal 1·8 Max. Signal 13·0	5000	—	0·018
25L6	BEAM POWER OUTPUT TETRODE	Class "A" Power Amplifier	H	25·0	0·3	200	Zero Signal 50·0 Max. Signal 55·0	−8	110	Zero Signal 2·0 Max. Signal 7·0	9500	—	0·03

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	For incandescent light and near infra-red, Sensitivity = 25 μA/Lumen at 2700° K. Dark current at 250 v. = 0·05 μA. Caesium on Oxidised Silver Cathode.	30	NC	K	NC	NC	NC	K	NC	A	—	—	—	**20CV**
—	—	0·8	Peak anode voltage = + 7 kV. max. with max. pulse duration 18% of one cycle, with a max. of 18 μsecs.	22	IC	G_1	K	H	H	G	IC	G_2	G_3	A	—	**21A6**
Plate to Plate 2500	20		Common series screen resistor 1000 Ω. R.M.S. grid to grid volts = 22·5. Total harmonic distortion 5·5%.													
		0·02		8	F	A	G_2	F–	-	—	—	—	—	G_1	—	**22**
—	—	0·007		15	H	A	G_2	K	H	—	—	-		G_1	—	**24A**
5000	2·2	0·2	Total Harmonic Distortion 10%.	30	S	H	A	G_2	G_1	—	H	K G_3	—	—	—	**25A6**
					NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**25A6G** **25A6GT** **25A6GT/G**
—	—		Condenser input to filter 16 μF. Plate supply impedance 15 Ω minimum.													
4500	0·77	—	Total Harmonic Distortion 9%.	30	K^r	H	A^p	$G_2{}^p$	$G_1{}^p$	A^r	H	K^p $G_3{}^p$	—	—		**25A7G** **25A7GT** **25A7GT/G**
4800 Plate to Plate	6·0	—	Values are for two tubes. Peak Input Power = 810 mV. Peak A.F. Grid to Grid volts = 60.	30	NC	H	A	–	G_1	—	H	K	—	-	—	**25AC5G** **25AC5GT** **25AC5GT /G**
2500	7·1	—	Total Harmonic Distortion 15%. Second Harmonic Distortion 8·5%. Third Harmonic Distortion 11%.	30	NC	H	A	G_2	G_1	—	H	K		–	—	**25B6G**
3000	4·3	0·3	Total Harmonic Distortion 10%.	30	S	H	A	G_2	G_1	—	H	K G_3	—		—	**25L6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
25L6G **25L6GT** **25L6GT/G**	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	25·0	0·3	200	Zero Signal 46·0 Max. Signal 47·0	See Note	125	Zero Signal 2·2 Max. Signal 8·5	8000	—	0·028
25Y5	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	25·0	0·3	Max. R.M.S. 235	D.C. Output 75·0 Max. per Plate	—	—	—	—	—	—
25Z4G	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	25·0	0·3	Max. R.M.S. 250	D.C. Output 100 Max.	—				—	—
25Z5	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	25·0	0·3	★	★	—					
25Z6 **25Z6G** **25Z6GT** **25Z6GT/G**	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	25·0	0·3	R.M.S. 235	D.C. Output 75·0 Max. per Plate	—	—	—	—	—	—
26	**TRIODE**	Class "A" Amplifier	F	1·5	1·05	180	6·2	−14·5	—	—	1150	8·3	7300 Ohms
27	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier and Biased Detector	H	2·5	1·75	250	5·2	−21	—	—	975	9	9250 Ohms
30	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier Class "B" Power Amplifier	F	2·0	0·06	★	★	★	—	—	★	★	★
31	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	2·0	0·13	135 180	8·0 12·3	−22·5* −30†	— —	— —	925 1050	3·8 3·8	4100Ω 3600Ω
32	**R.F. TETRODE**	R.F. Amplifier and Biased Detector	F	2·0	0·06	135 180	1·7 1·7	−3 −3	67·5 67·5	0·4 0·4	640 650	— —	0·95 1·2

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
4000	3·8	0·8 0·8	Cathode Bias Resistor 180 Ω. Total Harmonic Distortion 10%.	30	S	H	A	G_2	G_1	—	H	K G_3	—	—	—	25L6G 25L6GT 25L6GT/G
—	—	—	In half-wave service the two units may be used separately or in parallel. With less than 40 µF condenser input to filter plate supply impedance per plate = 0 Ω. Greater supply impedances required for larger input capacities.	17	H	A"	K"	K'	A'	H	—	—	—	—	—	25Y5
—	—	—	Condenser input to filter = 32 µF maximum. Plate supply impedance = 100 Ω minimum.	30	NC	H	A'	NC	A"	—	H	K	—	—	—	25Z4G
	—	—	★ *For data and notes refer type* 25Z6.	17	H	A"	K"	K'	A'	H	—	—	—	—	—	25Z5
	—	—	In half-wave service the two units may be used seperately or in parallel. Condenser input to filter = 16 µF. Plate supply impedance per plate = 100 Ω min.	30	S NC	H H	A" A"	K" K"	A' A'	— —	H H	K' K'	— —	— —	— —	25Z6 25Z6G 25Z6GT 25Z6GT/G
	—	8·1	Grid bias referred to centre of A.C. operated filament.	8	F	A	G_1	F	—	—	—	—	—	—	—	26
	—	3·3	As biased detector zero signal plate current adjusted to 0·2 mA. Plate volts = 250 volts. Grid Bias — 30 volts.	15	H	A	G_1	K	H	—	—	—	—	—	—	27
★	★	6·0	★ *For data and notes refer type* 1H4G.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	30
7000 5700	0·185 0·375	5·7	* Cathode Bias Resistor 2815 Ω. † Cathode Bias Resistor 2440 Ω. Full or partial self-biasing is recommended and is essential if a grid resistor is used. Maximum grid resistor 1·0 meg.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	31
	— —	0·015	As biased detector zero signal plate current adjusted to 0·2 mA. Plate volts 180 volts. Grid Bias — 6 volts.	8	F+	A	G_2	F−	—	—	—	—	—	G_1	—	32

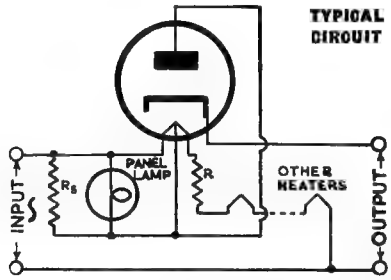
TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
35L7GT	**RECTIFIER BEAM POWER OUTPUT TETRODE**	Rectifier and Class "A" Power Amplifier	H	32·5	0·3	90	27	−7	90	2·0	4800	—	0·017
33	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·26	135 180	14·5 22·0	−13·5 −18	135 180	3·0 5·0	1450 1700	— —	0·05 0·055
34	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·06	135 180	2·8 2·8	−3 −3	67·5 67·5	1·0 1·0	600 620	— —	0·6 1·0
35	**REMOTE CUT-OFF R.F. TETRODE**	R.F. Amplifier	H	2·5	1·75	250	6·5	−3	90	2·5	1050	—	0·4
35A5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	35·0	0·15	200	Zero Signal 41·0 Max. Signal 44·0	−8	110	Zero Signal 2·0 Max. Signal 7·0	5900	—	0·04
35B5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	35·0	0·15	110	Zero Signal 40·0 Max. Signal 41·0	−7·5	110	Zero Signal 3·0 Max. Signal 7·0	5800	—	0·013
35C5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	35·0	0·15	★	★	★	★	★	★	—	★
35L6G 35L6GT 35L6GT/G	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	35·0	0·15	200	Zero Signal 41·0 Max. Signal 44·0	−8	110	Zero Signal 2·0 Max. Signal 7·0	5900	—	0·04

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
2600	1·0	—	Total Harmonic Distortion 9%. Rectifier Unit (half-wave) Condenser Input to filter Max. R.M.S. 125 volts. D.C. Output 60·0 mA max.	30	K^r	H	A^t	$G_2{}^t$	$G_1{}^t$	A^r	H	K^t	—	—	—	**32L7GT**
7000 6000	0·7 1·4	1·0	Total Harmonic Distortion 7% in each case.	15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	**33**
— —	— —	0·015	Mutual Conductance 15 μmhos at − 22·5 volts grid bias.	8	F+	A	G_2	F−	—	—	—	—	—	G_1	—	**34**
—	—	0·007	Mutual Conductance 15 μmhos at − 40 volts grid bias.	15	H	A	G_2	K	H	—	—	—	—	G_1	—	**35**
4500	3·3	—	Total Harmonic Distortion 10%.	29	H	A	G_2	NC	NC	G_1	K G_3	H	—	—	S	**35A5**
2500	1·5	0·4	Total Harmonic Distortion 10%.	21	G_1	K G_3	H	H	A	G_2	G_1	—	—	—	—	**35B5**
★	★	0·57	★ *For data and notes refer type* 35B5.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**35C5**
4500	3·3	— 0·8 0·8	Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_2	—	—	—	**35L6G** **35L6GT** **35L6GT/G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
35W4	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier (without Panel Lamp)		35·0	0·15	R.M.S. 117	D.C. Output 100 Max.	—	—	—	—	—	—
		Half-wave Rectifier (with Panel Lamp of 6 to 8 V. at 0·15 A)	H	32·0	See Notes	R.M.S. 117	See Notes	—	—	—	—	—	—
35Y4	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier (without Panel Lamp)		35·0	0·15	R.M.S. 235	D.C. Output 100 Max.	—	—	—	—	—	—
		Half-wave Rectifier (with Panel Lamp of 6 to 8 V. at 0·15 A)	H	32·0	See Notes	R.M.S. 235	D.C. Output 60 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Heater circuit connection pins 3 and 4. No connection to pin 6. Condenser input to filter 40 μF. Plate supply impedance = 15 Ω minimum.	21	NC	NC	H	H	A	H_t	K	—	—	—	—	**35W4**
															
—	—	—	Heater circuit connection pins 3 and 4. Panel lamp connection pins 4 and 6 (5·5 volts with lamp alight). Heater current between pins 3 and 6 = 0·15 A. For output current = 90 mA, R_s = 100 Ω. 80 mA, R_s = 150 Ω. 70 mA, R_s = 300 Ω. 60 mA, R_s = —. Condenser input to filter 40 μF. Plate supply impedance = 15 Ω minimum.													
—	—	—	Heater circuit connection pins 1 and 8. No connection to pin 4. Condenser input to filter 40 μF. Plate supply impedance = 100 Ω minimum.	29	H	A	NC	H_t	NC	NC	K	H	—	—	S	**35Y4**
—	—	—	For typical circuit refer type 35W4. Heater circuit connection pins 1 and 8. Panel lamp connection pins 1 and 4 (5·5 volts with lamp alight). Heater current between pins 4 and 8 = 0·15 A. R_s not required for 60 mA Output. Condenser input to filter 40 μF. Plate supply impedance = 100 Ω minimum. For 117 V. R.M.S. input, with and without panel lamp, operational characteristics of type 35Y4 are identical to those of type 35W4.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
35Z3	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier	H	35·0	0·15	★	★	—	—	—	—	—	—
35Z4GT	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier	H	35·0	0·15	Max. R.M.S. 235	D.C. Output 100 Max.	—	—	—	—	—	—
35Z5G 35Z5GT 35Z5GT/G	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier (without Panel Lamp)	H	35·0	0·15	R.M.S. 235	D.C. Output 100 Max.	—	—	—	—	—	—
		Half-wave Rectifier (with Panel Lamp of 6 to 8 volts at 0·15 A)		32·0	See Notes	R.M.S. 235	D.C. Output 60 Max.	—	—	—	—	—	—
36	R.F. TETRODE	R.F. Amplifier and Biased Detector	H	6·3	0·3	250	3·2	−3	90	1·7	1080	—	0·55
37	DETECTOR AMPLIFIER TRIODE	A.F. Amplifier and Biased Detector	H	6·3	0·3	250	7·5	−18	—	—	1100	9·2	8400 Ohms
38	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	6·3	0·3	250	22·0	−25	250	3·8	1200	—	0·1
39 / 44	REMOTE CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·3	250	5·8	−3	90	1·4	1050	—	1·0
40	TRIODE	A.F. Amplifier	F	5·0	0·25	180 Supply	0·2	−3	—	—	200	30	0·15

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	★ *For data and notes refer type* 35Z4GT.	29	H	A	NC	NC	NC	NC	K	H	—	—	S	**35Z3**
—	—	—	With less than 40 μF condenser input to filter, plate supply impedance = 100 Ω min. Greater supply impedances required for larger input capacities.	30	NC	H	NC	—	A	—	H	K	—	—	—	**35Z4GT**
—	—	—	Heater circuit connections pins 2 and 7. No connection to pin 3. Condenser input to filter 40 μF. Plate supply impedance = 100 Ω minimum.	30	NC	H	H_3	—	A	—	H	K	—	—	—	**35Z5G 35Z5GT 35Z5GT/G**
—	—	—	For typical circuit refer type 35W4. Heater circuit connection pins 2 and 7. Panel lamp connection pins 2 and 3 (5·5 volts when lamp alight). Heater current between pins 3 and 7 = 0·15 A. R_3 not required for 60 mA output. Condenser input to filter 40 μF. Plate supply impedance = 100 Ω minimum. For 117 V. R.M.S. input, with and without panel lamp, operational characteristics of type 35Z5G, etc., are identical to those of type 35W4.	30	NC	H	H_3	—	A	—	H	K	—	—	—	**35Z5G 35Z5GT 35Z5GT/G**
—	—	0·007	As biased detector zero signal plate current adjusted to 0·1 mA. Plate volts 250 V. Grid bias — 8 V.	15	H	A	G_2	K	H	—	—	—	—	G_1	—	**36**
—	—	2·0	As biased detector zero signal plate current adjusted to 0·2 mA. Plate volts 250 V. Grid bias — 28 V.	15	H	A	G_1	K	H	—	—	—	—	—	—	**37**
10,000	2·5	0·3	Total Harmonic Distortion 8%.	15	H	A	G_2	K	H	—	—	—	—	G_1	—	**38**
—	—	0·007	Mutual conductance = 2 μmhos at — 42·5 volts grid bias.	15	H	A	G_2	K	H	—	—	—	—	G_1	—	**39 / 44**
—	—	8·0	Plate load resistor 0·25 meg.	8	F+	A	G_1	F—		—	—	—	—	—	—	**40**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
41	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·4	★	★	★	★	★	★	—	★
42	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier Class "AB_2" Power Amplifier	H	6·3	0·7	★	★	★	★	★	★	—	★
43	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	25·0	0·3	★	★	★	★	★	★	—	★
45	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	2·5	1·5	275	36·0	−56	—	—	2050	3·5	1700 Ohms
		Class "AB_2" Power Amplifier				275	Zero Signal 28·0 Max. Signal 138·0	−68	—	—	—	—	—
		Class "AB_2" Power Amplifier				275	Zero Signal 36·0 Max. Signal 90·0	See Note	—	—	—	—	—
45Z3	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	45·0	0·075	Max. R.M.S. 117	D.C. Output 65 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
★	★	—	★ *For data and notes refer type* 6K6G.	17	H	A	G_2	G_1	K	H	—	—	—	—	—	**41**
★	★	—	★ *For data and notes refer type* 6F6G.	17	H	A	G_2	G_1	K	H	—	—	—	—	—	**42**
★	★	—	★ *For data and notes refer type* 25A6.	17	H	A	G_2	G_1	K	H	—	—	—	—	—	**43**
4600	2·0	7·0	Grid bias referred to centre of A.C.-operated filament. Resistance coupling (max. grid resistance 1·0 meg.) only permissible with cathode bias. Cathode bias not essential but recommended in all other cases	8	F	A	G_1	F	—	—	—	—	—	—	—	**45**
3200 Plate to Plate	18·0		Fixed bias condition. Grid bias referred to centre of A.C.-operated filament. Values are for two valves. Total Harmonic Distortion 5%. Grid to grid input power 656 mW.													
5060 Plate to Plate	12·0		Cathode bias resistor 775 Ω. Values are for two valves. Total Harmonic Distortion 5%. Grid to grid input power 460 mW.													
			Condenser input to filter. Plate supply impedance = 15 ohms minimum.	21	H	A	IC	K	NC	A	H	—	—	—	—	**45Z3**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
		Half-wave Rectifier (without Panel Lamp)		15·0	0·15	R.M.S. 235	D.C. Output 100 Max.	—	—	—	—	—	—
45Z5GT	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier (with Panel Lamp of 6 to 8 V. at 0·15 A)	H	2·0	See Notes	R.M.S. 235	D.C. Output 60 Max.	—	—	—	—	—	—
		Class "A" Power Amplifier				250	22·0	(G_1) −33	—	—	2350	5·6	2380 Ohms
46	POWER OUTPUT TETRODE	Class "B" Power Amplifier	F	2·5	1·75	400	Zero Signal 6·0	(G_{1+2}) 0	—	—	—	—	—
47 47M	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F H	2·5	1·75	250	31	−16·5	250	6·0	2500	—	0·06
48	POWER OUTPUT TETRODE	Class "A" Power Amplifier	H	30·0	0·4	125	56	−20	100	9·5	3900	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Heater circuit connections pins 2 and 7. No connection to pin 3. With less than 40 μF condenser input to filter, minimum plate supply impedance = 100 Ω minimum. Greater supply impedances required for larger input capacities.	30	NC	H	H^1	—	A	—	H	K	—	—	—	**45Z5GT**
—	—	—	For typical circuit refer type 35W4. Heater circuit connection pins 2 and 7. Panel lamp connection pins 2 and 3 (5·5 volts when lamp alight). Heater current between pins 3 and 7 = 0·15 A. R_g not required for 60 mA output. With less than 40 μF condenser input to filter, minimum plate supply impedance = 100 Ω minimum. Greater supply impedances required for larger input capacities. For 117 V. R.M.S. input, with and without panel lamp, operational characteristics of type 45Z5GT are identical to those of type 35Z5GT.												
6400	1·25	—	Grid No. 2 tied to plate at socket. Grid bias referred to centre of A.C.-operated filament.	15	F	A	G_1	G_2	F	—	—	—	—	—	—	**46**
5800 Plate to Plate	20		Values are for two valves. Grids Nos. 1 and 2 tied at socket. Grid and plate returns connected to centre-tap of filament winding or centre-tap of 20 Ω resistor across winding. Peak A.F. Grid to Grid volts = 116 at 650 mW.													
7000	2·7	1·2	Total Harmonic Distortion 6%. Grid Bias referred to centre of A.C.-operated filament. 47M { Cathode internally tied to centre of heater.	15	F H	A A	G_1 G_1	G_2 G_2	F H	— —	— —	— —	— —	— —	— —	**47** **47M**
1500	2·5	—	Total Harmonic Distortion 9%. Plate Resistance is subject to large variations.	17	H	A	G_2	G_1	K	H	—	—	—	—	—	**48**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
49	POWER OUTPUT TETRODE	Class "A" Power Amplifier	F	2.0	0.12	135	6·0	(G_1) −20	—	—	1125	4·7	4175 Ohms
		Class "B" Power Amplifier				180	Zero Signal 2·0 per Tube	(G_{1+2}) 0	—	—	—	—	—
50	POWER OUTPUT TRIODE	Class "A" Power Amplifier	F	7·5	1·25	450	55	−84	—	—	2100	3·8	1800 Ohms
50A5	BEAM POWER OUTPUT TETRODE	Class "A" Power Amplifier	H	50	0·15	200	Zero Signal 50 Max. Signal 55	−8	100	Zero Signal 1·5 Max. Signal 6·0	8250	—	0·035
50B5	BEAM POWER OUTPUT TETRODE	Class "A" Power Amplifier	H	50	0·15	110	Zero Signal 49 Max. Signal 50	−7·5	110	Zero Signal 4·0 Max. Signal 8·5	7500	—	0·014
50C5	BEAM POWER OUTPUT TETRODE	Class "A" Power Amplifier	H	50	0·15	110	Zero Signal 49 Max. Signal 50	−7·5	110	Zero Signal 4·0 Max. Signal 8·5	7500	—	0·01
50C6G	BEAM POWER OUTPUT TETRODE	Class "A" Power Amplifier	H	50	0·15	200	Zero Signal 61 Max. Signal 66	−14	135	Zero Signal 2·2 Max. Signal 9·0	7100	—	18,300 Ohms
50L6G 50L6GT	BEAM POWER OUTPUT TETRODE	Class "A" Power Amplifier	H	50	0·15	★	★	★	★	★	★	—	★
50X6	FULL-WAVE VACUUM RECTIFIER	Half-wave Rectifier	H	50	0·15	★	★	—	—	—	—	—	—
50Y6GT	FULL-WAVE VACUUM RECTIFIER	Half-wave Rectifier	H	50	0·15	★	★	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
11,000	0·17		Grid No. 2 tied to plate at socket.													
12,000 plate to Plate	3·5	—	Unless otherwise stated values are for two valves. Grids Nos. 1 and 2 tied at socket.	15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	**49**
4350	4·6	7·1	Grid Bias referred to centre of A.C. operated filament. Resistance coupling (maximum resistance 10,000 Ω) only permissible with cathode bias. Cathode bias not essential, but recommended in all other cases.	8	F	A	G_1	F	—	—	—	—	—	—	—	**50**
3000	4·3	—	Total Harmonic Distortion 10%.	29	H	A	G_2	NC	NC	G_1	K G_3	H	—	—	S	**50A5**
2500	1·9	0·5	Total Harmonic Distortion 9%.	21	G_1	K G_3	H	H	A	G_2	G_1	—	—	—	—	**50B5**
2500	1·9	0·64	Total Harmonic Distortion 9%.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**50C5**
2600	6·0	—	Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**50C6G**
★	★	—	★ *For data and notes refer type* 25L6.	30	NC	H	A	G_2	G_1	—	H	K	—	—	—	**50L6G** **50L6GT**
	—	—	★ *For data and notes refer type* 25Z6GT.	29	H	K"	A"	NC	NC	A'	K'	H	—	—	S	**50X6**
—	—	—	★ *For data and notes refer type* 25Z6GT.	30	NC	H	A"	K"	A'	—	H	K'	—	—	—	**50Y6GT**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage	Current	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
50Y7GT	FULL-WAVE VACUUM RECTIFIER	Half-wave Rectifier (without Panel Lamp)	H	50·0	0·15	R.M.S. 235	D.C. Output 150 Max.	—	—	—	—	—	—
		Half-wave Rectifier (with Panel Lamp of 6 to 8 V. at 0·15 A)		46·0	See Notes	R.M.S. 235 per Plate	D.C. Output per Plate 65 Max.	—	—	—	—	—	—
51	REMOTE CUT-OFF R.F. PENTODE	R.F. Amplifier	H	2·5	1·75	★	★	★	★	★	★	—	★
53	TWIN POWER OUTPUT TRIODE	Class "B" Power Amplifier	H	2·5	2·0	★	★	★	—	—	—	—	—
55	DUO-DIODE TRIODE	Detector A.F. Amplifier	H	2·5	1·0	★	★	★	—	—	★	★	★
56	TRIODE	A.F. Amplifier	H	2·5	1·0	★	★	★	—	—	★	★	★
57	SHARP CUT-OFF PENTODE	R.F. and A.F. Amplifier	H	2·5	1·0	★	★	★	★	★	★	—	★
58	REMOTE CUT-OFF R.F. PENTODE	R.F. Amplifier	H	2·5	1·0	★	★	★	★	★	★	—	★
58CG	GAS-FILLED PHOTO-ELECTRIC CELL	P.E. Cell	PE	—	—	90	0·001	—	—	—	—	—	—
58CV	VACUUM PHOTO-ELECTRIC CELL	P.E. Cell	PE	—	—	90	0·003 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Heater circuit connection pins 2 and 7. No connection to pin 6. Condenser input to filter 16 μF. Plate supply impedance per plate = 100 Ω min. Values are for two units in parallel.													
—	—	—	For typical heater circuit refer type 35W4. Heater circuit connection pins 2 and 7. Panel lamp connection pins 6 and 7 (5·5 volts when lamp alight). Heater current between pins 2 and 6 = 0·15 A. Panel lamp shunting resistor = 250 Ω. Condenser input to filter 16 μF. Plate supply impedance per plate = 100 Ω min.	30	NC	H	A^{II}	K^{II}	A^{I}	H_t	H	K^{I}	—	—	—	**50Y7GT**
—	—	—	★ *For data and notes refer type* 35.	15	H	A	G_2	K	H	—	—	—	—	G_2	—	**51**
★	★	—	★ *For data and notes refer type* 6N7.	20	H	A^{II}	G_1^{II}	K	G_1^{I}	A^{I}	H	—	—	—	—	**53**
★	★	1·5	★ *For data and notes refer type* 85.	17	H	A	D_2	D_1	K	H	—	—	—	G_1	—	**55**
★	★	3·2	★ *For data and notes refer type* 6P5G. *For replacement consider also type* 76.	15	H	A	G_1	K	H	—	—	—	—	—	—	**56**
—	—	0·007	★ *For data and notes refer type* 6J7. *For replacement consider also type* 6C6.	17	H	A	G_2	G_3	K	H	—	—	—	G_1	—	**57**
—	—	0·007	★ *For data and notes refer type* 6U7G. *For replacement consider also type* 6D6.	17	H	A	G_2	G_3	K	H	—	—	—	G_1	—	**58**
—	—	—	For red and near infra-red. Sensitivity = 85 μA/Lumen at 2700° K. Dark current at 90 V. = 0·1 μA. Caesium on oxidised silver cathode.	53	A	K	—	—	—	—	—	—	—	—	—	**58CG**
	—	—	For red and near infra-red. Sensitivity = 15 μA/Lumen at 2700° K. Dark current at 100 V. = 0·05 μA. Caesium on oxidised silver cathode.	53	A	K	—	—	—	—	—	—	—	—	—	**58CV**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
59	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	2·5	2·0	250	35·0	−18	250	9·0	2500	—	0·04
70B1	VOLTAGE STABILIZER	Voltage Stabilizer	COLD	—	—	70	5·0 to 15·0	—	—	—	—	—	—
70L7GT	RECTIFIER— BEAM POWER OUTPUT TETRODE	Half-wave Rectifier	H	70	0·15	Max. R.M.S. 117	D.C. Output 70 Max.	—	—	—	—	—	—
		Class "A" Power Amplifier				110	Zero Signal 40 Max. Signal 43	−7·5	110	Zero Signal 3·0 Max. Signal 6·0	7500	—	0·015
71A	POWER OUTPUT TRIODE	Class "A" Power Amplifier	F	5·0	0·25	180	20·0	−40·5	—	—	1700	3	1750 Ohms
75	DUO-DIODE HIGH μ TRIODE	Detector A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
76	TRIODE	A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
77	SHARP CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·3	250	2·3	−3	100	0·5	1250	—	> 1·0
78	REMOTE CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
79	TWIN POWER OUTPUT TRIODE	Class "B" Power Amplifier	H	6·3	0·6	250	Zero Signal 5·3 per Plate	0	—	—	—	—	—
80	FULL-WAVE VACUUM RECTIFIER	Full-wave Rectifier	F	5·0	2·0	★	★	—	—	—	—	—	—
80S	FULL-WAVE VACUUM RECTIFIER	Full-wave Rectifier	H	5·0	2·0	★	★	—	—	—	—	—	—
81	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier	F	7·5	1·25	Max. R.M.S. 700	D.C. Output 85·0 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
6000	3·0	—	Total Harmonic Distortion 7%.	20	H	A	G_2	G_1	G_2	K	H	—	—	—	—	**59**
—	—	—	Starting voltage = 100 volts D.C.	31	A	K	IC	K	IC	IC	IC	K	—	—	—	**70B1**
—	—	—	Condenser input to filter = 90 μF max. Plate supply impedance = 15 ohms minimum.	30	K^r	H	A^t	$G_2{}^t$	$G_1{}^t$	K^t	H	A^r	—	—	—	**70L7GT**
2000	1·8	—	Total Harmonic Distortion 10%.													
4800	0·79	7·5		8	F+	A	G_1	F−	—	—	—	—	—	—	—	**71A**
—	—	1·7	★ *For data and notes refer type* 6SQ7GT. *For replacement consider also type* 6B6G.	17	H	A	D_2	D_1	K	H	—	—	—	G_1	—	**75**
—	—	2·8	★ *For data and notes refer type* 6P5G.	15	H	A	G_1	K	H	—	—	—	—	—	—	**76**
—	—	0·007	Cathode current cut-off at − 7·5 volts grid bias.	17	H	A	G_2	G_3	K	H	—	—	—	G_1	—	**77**
—	—	0·007	★ *For data and notes refer type* 6K7.	17	H	A	G_2	G_3	K	H	—	—	—	G_1	—	**78**
14,000 Plate to Plate	8·0	—	Average power input = 389 mW applied between grids. As phase inverter (300 volts supply). Following grid leak 1·0 meg. Plate resistor 0·5 meg. Cathode resistor 3600 Ω. Gain = 46.	17	H	A^{II}	$G_1{}^{II}$	K	A^I	H	—	—	—	$G_1{}^I$	—	**79**
—	—	—	★ *For data and notes refer type* 5Y3G.	8	F	A^{II}	A^I	F	—	—	—	—	—	—	—	**80**
—	—	—	★ *For data and notes refer type* 5Z4G. *For replacement consider also types* 5Y3GT *and* 80.	8	K H	A^I	A^{II}	H	—	—	—	—	—	—	—	**80S**
	—	—		8	F	A	NC	F	—	—	—	—	—	—	—	**81**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
82	**FULL-WAVE GAS-FILLED RECTIFIER**	Full-wave Rectifier	F	2·5	3·0	Max. R.M.S. 2 X 450	D.C. Output 115·0	—	—	—	—	—	—
83	**FULL-WAVE GAS-FILLED RECTIFIER**	Full-wave Rectifier	F	5·0	3·0	Max. R.M.S. 2 x 450	D.C. Output 225·0 Max.	—	—	—	—	—	—
83V	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	5·0	2·0	★	★	—	—	—	—	—	—
84 / 6Z4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·5	Max. R.M.S. 2 x 325	D.C. Output 60·0 Max.	—	—	—	—	—	—
85	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	250	8·0	−20	—	—	1100	8·3	7500 Ohms
85A1	**VOLTAGE REFERENCE**	Voltage Reference	COLD	—	—	★	★	—	—	—	—	—	—
85A2	**VOLTAGE REFERENCE**	Voltage Reference	COLD	—	—	85	1·0 to 8·0	—	—	—	—	—	—
89	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·4	250	32·0	−25	250	5·5	1800	—	0·07
90AV	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	100	0·005	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Tube voltage drop 15 volts. With less than 40 µF condenser input to filter, min. supply impedance per plate = 50 Ω. Greater supply impedances are required for larger input capacities.	8	F	A"	A'	F	—	—	—	—	—	—		**82**
—	—	—	Tube voltage drop 15 volts. With less than 40 µF condenser input to filter, min. supply impedance per plate = 50 Ω. Greater supply impedances are required for larger input capacities.	8	F	A"	A'	F	—	—	—	—	—	—	—	**83**
—	—	—	★ *For data and notes refer type* 5V4G.	8	H	A"	A'	H K	—	—	—	—	—	—	—	**83V**
—	—	—	With less than 40 µF condenser input to filter, minimum supply impedance per plate = 65 Ω. Greater supply impedances are required for larger input capacities.	15	H	A"	A'	K	H	—	—	—	—	—	—	**84 / 6Z4**
20,000	0·35	1·5	As R.C. amplifier (300 V. supply). Following grid leak 1·0 meg. Plate resistor 0·25 meg. Cathode resistor 23,600 Ω. Gain = 5·8.	17	H	A	D_2	D_1	K	H	—	—	—	G_1	—	**85**
—	—	—	★ *For data and notes refer type* OE3.	30	NC	A	NC	K	NC	NC	NC	K	—	—	—	**85A1**
—	—	—	Quiescent current = 4·5 mA. Starting voltage = 125 volts D.C. max. A.C. resistance = 290 Ω.	21	A	K	IC	K	A	IC	K	—	—	—	—	**85A2**
6750	3·4	—	Total Harmonic Distortion 9%.	17	H	A	G_2	G_3	K	H	—	—	—	G_1	—	**89**
—	—	—	For daylight and bluish light Sensitivity = 45 µA/Lumem at 2700°K. Dark current at 100 volts = 0·05 µA. Caesium—Antimony Cathode. External connections to cathode should be made to pins 1 and 7 connected together.	21	K	NC	A	A	A	NC	K	—	—	—	—	**90AV**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
90CG	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	P E	—	—	90	0·002	—	—	—	—	—	—
90CV	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	P E	—	—	50	0·005	—	—	—	—	—	—
99	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier and Biased Detector	F	3·0	0·06	90	2·5	−4·5	—	—	425	6·6	0·0155
100E1	**NEON-FILLED VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	100	50·0 to 200·0	—	—	—	—	—	—
105B1	**VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	105	5·0 to 15·0	—	—	—	—	—	—
112A	**DETECTOR AMPLIFIER TRIODE**	Class "A" Power Amplifier and Biased Detector	F	5·0	0·25	★	★	★	—	—	★	★	★
117L7GT / 117M7GT	**RECTIFIER BEAM POWER OUTPUT TETRODE**	Half-wave Rectifier and Class "A" Power Amplifier	H	117	0·09	★	★	★	★	★	★	—	★
117N7GT	**RECTIFIER BEAM POWER OUTPUT TETRODE**	Half-wave Rectifier	H	117	0·09	Max. R.M.S. 117	D.C. Output 75·0 Max.	—	—	—	—	—	—
		Class "A" Power Amplifier				100	51·0	−6	100	5·0	7000	—	0·016

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	For incandescent light and near infra-red. Sensitivity = 125 μA/Lumen at 2700°K. Dark current at 90 V. = 0·1 μA. Caesium on oxidised silver cathode. Gas amplification factor = 10 maximum.	21	NC	K	NC	A	NC	K	NC	—	—	—	—	**90CG**
—	—	—	For incandescent light and near infra-red. Sensitivity = 20 μA/Lumen at 2700°K. Dark current at 100 volts = 0·05 μA. Caesium on oxidised silver cathode.	21	NC	K	NC	A	NC	K	NC	—	—	—	—	**90CV**
—	—	3·3	As biased detector adjust zero signal plate current to 0·2 mA. Plate volts = 90 volts. Grid bias — 10·5 volts.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	**99**
—	—	—	Quiescent current = 125 mA. Starting voltage = 140 volts D.C. A.C. resistance = 30 Ω max.	10	A	NC	K	NC	—	—	—	—	—	—	—	**100E1**
—	—	—														**105B1**
★	★	8·5	★ *For data and notes refer type* 12A.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	**112A**
★	★	—	★ *For data and notes refer type* 117P7GT.	30	K^r	H	A^t	$G_1{}^t$	$G_2{}^t$	A^r	H	K^t	—	—	—	**117L7GT / 117M7GT**
—	—	—	With less than 40 μF condenser input to filter, minimum plate supply impedance = 15 Ω. Greater supply impedances are required for larger input capacities.	30	NC	H	A^t	$G_1{}^t$	$G_2{}^t$	K^t	A^r H	K^r	—	—	—	**117N7GT**
3000	1·2	—	Total Harmonic Distortion 6%.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage	Current	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
117P7GT	RECTIFIER BEAM POWER OUTPUT TETRODE	Half-wave Rectifier				Max. R.M.S. 117	D.C. Output 75 Max.	—	—	—	—	—	—
		Class "A" Power Amplifier	H	117	0·09	105	Zero Signal 43 Max. Signal 43	−5·2	105	Zero Signal 4·0 Max. Signal 5·5	5300	—	0·017
117Z3	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier	H	117	0·04	R.M.S. 117	D.C. Output 90 Max.	—	—	—	—	—	—
117Z4GT	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier	H	117	0·04	R.M.S. 117	D.C. Output 90 Max.	—	—	—	—	—	—
117Z6G 117Z6GT 117Z6GT/G	FULL-WAVE VACUUM RECTIFIER	Half-wave Rectifier	H	117	0·075	R.M.S. 235	D.C. Output per Plate 60 Max.	—	—	—	—	—	—
150A1	VOLTAGE STABILIZER	Voltage Stabilizer	COLD	—	—	150	1·0 to 8·0	—	—	—	—	—	—
150B1	VOLTAGE STABILIZER	Voltage Stabilizer	COLD	—	—	150	5·0 to 15·0	—	—	—	—	—	—
150C1	VOLTAGE STABILIZER	Voltage Stabilizer	COLD	—	—	150	5·0 to 40·0	—	—	—	—	—	—
161	CURRENT REGULATOR	Current Regulator	F	100 to 200	0·16	—	—			—	—	—	—
302	CURRENT REGULATOR	Current Regulator	F	112 to 195	0·3	—	—	—	—	—	—	—	—
329	CURRENT REGULATOR	Current Regulator	F	10 to 30	1·15	—	—	—	—	—	—	—	—
373	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier	F	4·0	1·0	Max. R.M.S. 220	D.C. Output 40 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Condenser input to filter = 40 μF maximum. Plate supply impedance = 15 Ω minimum.	30	NC	H	A^1	$G_1{}^1$	$G_2{}^1$	K^1	H A^2	K^2	—	—	—	**117P7GT**
4000	0·85	—	Total Harmonic Distortion 5%.													
—	—	—	Condenser input to filter = 40 μF maximum. Plate supply impedance = 15 Ω minimum.	21	IC	NC	H	H	A	K	NC	—	—	—	—	**117Z3**
—	—	—	With less than 40 μF condenser input to filter, minimum plate supply impedance = 30 Ω. Greater supply impedances are required for larger input capacities.	30	NC	H	NC	—	A	—	H	K	—	—	—	**117Z4GT**
—	—	—	In half-wave service the two units may be used separately or in parallel. Condenser input to filter 40 μF. Plate supply impedance = 100 Ω minimum per plate.	30	NC	H	A^{II}	K^{II}	A^1	—	H	K^1	—	—	—	**117Z6G** **117Z6GT** **117Z6GT/G**
—	—	—	Quiescent current = 4 mA. Starting voltage = 205 V. D.C. A.C. resistance = 1140 Ω.	26	NC	NC	NC	NC	K	NC	NC	A	—	—	—	**150A1**
—	—	—														**150B1**
—	—	—	Quiescent current = 20 mA max. Starting voltage = 205 V. D.C. A.C. resistance = 200 Ω.	26	NC	NC	NC	NC	K	NC	NC	A	—	—	—	**150C1**
—	—	—		40	R	R						—		—	—	**161**
—	—	—		40	R	R	—	—	—	—	—	—	—	—	—	**302**
—	—	—		4	NC	R	R	—	—	—	—	—	—	—	—	**329**
—	—	—		4	A	F	F	—	—	—	—	—	—	—	—	**373**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
505	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	4·0	1·0	Max. R.M.S. 400	D.C. Output 60 Max.	—	—	—	—	—	—
506	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	1·0	Max. R.M.S. 2 x 300	D.C. Output 75 Max.	—	—	—	—	—	—
807	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	6.3	0.9	300	83	−12·5	250	8·0	6500	—	0·024
		Class "AB_1" Power Amplifier				300	Zero Signal 100 Max. Signal 119	See Note	300	Zero Signal 2·5 Max. Signal 16·5	—	—	—
		Class "AB_2" Power Amplifier				400	Zero Signal 90 Max. Signal 240	−55	300	Zero Signal 5·0 Max. Signal 10·0	—	—	—
868	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	100 Max.	0·002 Max.	—	—	—	—	—	—
874	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	90	10 to 50	—	—	—	—	—	—
876	**CURRENT REGULATOR**	Current Regulator	F	40 to 60	1·7	—	—	—	—	—	—	—	—
878	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	2·5	5·0	Max. R.M.S. 7100	Peak 20 Average 5	—	—	—	—	—	—
879	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	2·5	1·75	★	★	—	—	—	—	—	—
884	**GAS TRIODE**	Relaxation Oscillator	H	6·3	0·6	Max. Peak 300	Peak 300 Max. Average 2	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—		4	A	F	F	—	—	—	—	—	—	—	—	505
—	—	—	Condenser input to filter — 16 μF maximum.	10	A"	F	A'	F	—	—	—	—	—	—	—	506
3000	6·4	0·2	Total Harmonic Distortion 6%.	15	H	G_2	G_1	K	H	—	—	—	—	A	—	807
9000 Plate to Plate	32·5		Cathode bias resistor 270 Ω. Peak A.F. grid to grid volts = 72. Total Harmonic Distortion 2·7%. Values are for two valves.													
3200 Plate to Plate	55·0		Peak A.F. grid to grid volts = 78. Total Harmonic Distortion less than 2% with zero—impedance driver and perfect regulation. Values are for two valves.													
—	—	—	For 8000 ± 1000° A (Red-Infra Red). Sensitivity = 90 μA/Lumen with O. cycles/sec. at 2870° K and 1·0 meg. series resistor. Dark current at 90 V. = 0·1 μA. Gas amplification factor = 8 maximum.	8	NC	A	NC	K	—	—	—	—	—	—	—	868
—	—	—	Starting voltage = 115 V. D.C.	8	K	J	A	J	—	—	—	—	—	—	—	874
—	—	—	Ambient temperature 150° F.	42	R	R	—	—	—	—	—	—	—	—	—	876
—	—	—	Filament voltage applied between pins 1 and 4. Peak inverse volts = 20,000 For use with cathode ray tubes.	8	F+	F+	F−	F−	—	—	—	—	—	A	—	878
—	—	—	★ *For data and notes refer type* 2X2A.	8	H	NC	NC	H K	—	—	—	—	—	A	—	879
—	—	6·0	Grid resistor not less than 1000 Ω per maximum instantaneous unit voltage applied to the grid. Peak grid current 1·0 mA max.	30	NC	H	A	—	G_1	—	H	K	—	—	—	884

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
885	**GAS TRIODE**	Relaxation Oscillator	H	2·5	1·5	★	★	—	—	—	—	—	—
886	**CURRENT REGULATOR**	Current Regulator	F	40 to 60	2·05	—	—	—	—	—	—	—	—
919	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	P E	—	—	Max. Peak 500	Peak 0·03 Max. Average 0·01 Max.	—	—	—	—	—	—
920	**GAS-FILLED PHOTO-ELECTRIC CELL**	Twin P.E. Cell	P E	—	—	Max. Peak 90	Peak 0·006 Max. Average 0·002 Max.	—	—	—	—	—	—
926	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	P E	—	—	Max. Peak 500	Peak 0·015 Max. Average 0·005 Max.	—	—	—	—	—	—
927	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	P E	—	—	Max. Peak 90	Peak 0·006 Max. Average 0·002 Max.	—	—	—	—	—	—
929	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	P E	—	—	Peak 250	Peak 0·02 Max. Average 0·005 Max.	—	—	—	—	—	—
930	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	P E	—	—	Peak 90	Peak 0·01 Max. Average 0·003 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	6·0	★ *For data and notes refer type* 884.	15	H	A	G_1	K	H	—	—	—	—	—	—	**885**
—	—	—	Ambient temperature 150° F.	42	R	R	—	—	—	—	—	—	—	—	—	**886**
—	—	—	For 8000 ± 1000° A (Red-Infra Red). Sensitivity = 20 μA/Lumen at 2870° K with 1·0 meg. series resistor. Dark current at 250 volts = 0·005 μA.	8	NC	A	NC	NC	—	—	—	—	—	K	—	**919**
—	—	—	For 8000 ± 1000° A (Red-Infra Red). Sensitivity = 100 μA/Lumen at O cycles/sec. at 2870° K with 1·0 meg series resistor. Dark current at 90 volts = 0·1 μA. Gas amplification factor = 9. Values are for each unit.	8	K"	A"	A'	K'	—	—	—	—	—	—	—	**920**
—	—	—	For 4200 ± 1000° A (Ultra Violet-Blue). Sensitivity = 6·5 μA/Lumen at 2870° K with 1·0 meg. series resistor. Dark current at 250 volts = 0·005 μA.	34	K	A	—	—	—	—	—	—	—	—	—	**926**
—	—	—	For 8000 ± 1000° A (Red-Infra Red). Sensitivity = 125 μA/Lumen with O cycles/sec. at 2870° K with 1·0 meg. series resistor. Dark current at 90 volts = 0·1 μA. Gas amplification factor = 10 maximum.	41	NC	A	K	—	—	—	—		—	—	—	**927**
—	—	—	For 4000 ± 500° A (Ultra Violet-Blue). Sensitivity = 45 μA/Lumen at 2870° K with 1·0 meg. series resistor. Dark current at 250 volts = 0·0125 μA.	30	NC	NC	—	A	—	NC	—	K	—	—	—	**929**
	—		For 8000 ± 1000° A (Red-Infra Red). Sensitivity = 135 μA/Lumen at O cycles/sec. at 2870° K with 1·0 meg. series resistor. Dark current at 90 V. = 0·1 μA. Gas amplification factor = 10 maximum.	30	NC	NC	—	A	—	NC	—	K	—	—	—	**930**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
931A	MULTIPLIER PHOTO-ELECTRIC CELL	P.E. Cell	P E	—	—	Peak 1250	Peak 10·0 Max. Average 1·0 Max.	—	—	—	—	—	—
954	SHARP CUT-OFF R.F. PENTODE	R.F. and A.F. Amplifier	H	6·3	0·15	★	★	★	★	★	★	—	★
955	DETECTOR OSCILLATOR AMPLIFIER TRIODE	R.F. and A.F. Amplifier	H	6·3	0·15	180	4·5	−5	—	—	2000	25	0·0125
956	REMOTE CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·15	★	★	★	★	★	★	—	★
957	DETECTOR OSCILLATOR AMPLIFIER TRIODE	R.F. Amplifier	F	1·25	0·05	135	2·0	−5	—	—	650	13·5	0·0208
958A	OSCILLATOR AMPLIFIER TRIODE	R.F. Amplifier	F	1·25	0·1	135	3·0	−7·5	—	—	1200	12	0·01
959	DETECTOR AMPLIFIER R.F. PENTODE	R.F. Amplifier	F	1·25	0·05	135	1·7	−3	67·5	0·4	600	—	0·8
991	VOLTAGE STABILIZER	Voltage Stabilizer	COLD	—	—	48 to 67	Max. 2·0 Min. 0·4	—	—	—	—	—	—
1018	HALF-WAVE GAS-FILLED RECTIFIER	Half-wave Rectifier	F	1·8	1·8	Max. R.M.S. 16	D.C. Output 200 Max.	—	—	—	—	—	—
1561	FULL-WAVE VACUUM RECTIFIER	Full-wave Rectifier	F	4·0	2·0	Max. R.M.S. 2 x 500	D.C. Output 120·0 Max.	—	—	—	—	—	—
1603	SHARP CUT-OFF PENTODE	Low-noise Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	d for dynode. For 4000 ± 500° A (Ultra Violet-Blue). With 100 volts per dynode stage and 100 volts between dynode No. 9 and anode :— Sensitivity = 10 A/Lumen at 2870° K with 0·1 meg. series resistor. Dark current = 0·25 μA. Current amplification = 10^6.	44	1 d_1	2 d_2	3 d_3	4 d_4	5 d_5	6 d_6	7 d_7	8 d_8	9 d_9	10 A	11 K	**931A**
—	—	0·007	★ *For data and notes refer type* 9001.	22	H	G_2	G_3	H	K	G_1	A	—	—	—	—	**954**
20,000	0·135	1·4	Especially for wavelengths between 0·5 and 5·0 metres. As R.C. amplifier (250 volts supply). Plate resistor 0·25 meg. Grid bias — 3·5 volts. Plate current 0·42 mA. Gain = 20.	13	H	A	G_1	H	K	—	—	—	—	—	—	**955**
—	—	0·007	★ *For data and notes refer type* 9003.	22	H	G_2	G_3	H	K	G_1	A	—	—	—	—	**956**
—	—	1·2		13	F+	A	G_1	F−	F−	—	—	—	—	—		**957**
—	—	2·6	Capable of producing a useful power output at frequencies up to 350 Mc/s approx.	13	F+	A	G_1	F−	F−	—	—	—	—	—	—	**958A**
—	—	0·015		22	F+	G_2	G_3	F−	F−	G_1	A	—	—	—	—	**959**
—	—	—	Starting voltage 87 V. D.C. Additional circuit resistance may be required to limit the current to 2·0 mA max.	35	E	E	—	—	—	—	—	—	—	—	—	**991**
—	—	—	Rectifier for trickle charger.	48	F	A	F	—	—	—	—	—	—	—	—	**1018**
—	—	—	Condenser Input to Filter = 32 μF max.	26 10 8	NC A^I F	F F A^I	F A^{II} A^{II}	NC F F	A^{II} —	NC —	NC —	A^I —	— —	— —	— —	**1561**
—	—	0·007	★ *For additional data and notes refer type* 6J7G. *For applications critical as to microphonics, noise and hum.*	17	H	A	G_2	G_3	K	H	—	—	—	G_1	—	**1603**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
1620	**SHARP CUT-OFF PENTODE**	Low-noise Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
1805	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	1·0	Max. R.M.S. 2 x 500	D.C. Output 60·0 Max.	—	—	—	—	—	—
1815	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	2·5	Max. R.M.S. 2 x 500	D.C. Output 180·0 Max.	—	—	—	—	—	—
1832	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	4·0	1·3	Max. R.M.S. 700	D.C. Output 120·0 Max.	—	—	—	—	—	—
1852	**TELEVISION SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·45	★	★	★	★	★	★	—	★
1867	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	4·0	2·4	Max. R.M.S. 2 x 350	D.C. Output 120	—	—	—	—	—	—
1875	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	4·0	2·3	Max. R.M.S. 5000	D.C. Output 5·0 Max.	—	—	—	—	—	—
1876	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	4·0	0·3	Max. R.M.S. 850	D.C. Output 5·0 Max.	—	—	—	—	—	—
1877	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	4·0	0·65	Max. R.M.S. 5000	D.C. Output 3·0 Max.	—	—	—	—	—	—
1878	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	4·0	0·7	Max. R.M.S. 10,500	D.C. Output 2·0 Max.	—	—	—	—	—	—
1904	**CURRENT REGULATOR**	Current Regulator	F	30 to 80	0·1	—	—	—	—	—	—	—	—
1910	**CURRENT REGULATOR**	Current Regulator	F	5 to 15	1·4	—	—	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·005	★ *For additional data and notes refer type* 6J7. *For applications critical as to microphonics.*	30	S	H	A	G_3	G_2	—	H	K	—	G_1	—	**1620**
—	—	—	Condenser Input to Filter = 32 μF max.	10	A^I	F	A^{II}	F	—	—	—	—	—	—	—	**1805**
—	—	—	Condenser Input to Filter = 32 μF max.	10	A^I	F	A^{II}	F	—	—	—	—	—	—	—	**1815**
—	—	—	Condenser Input to Filter = 32 μF max.	4	A	F	F	—	—	—	—	—	—	—	—	**1832**
—	—	—	★ *For data and notes refer type* 6AC7/1852.	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**1852**
—	—	—		8	H	A^{II}	A^I	K H	—	—	—	—	—	—	—	**1867**
—	—	—	Condenser input to filter = 0·5 μF max. Plate supply impedance = 10,000 Ω min.	26	NC	F	F	NC	NC	NC	NC	NC	—	A	—	**1875**
—	—	—	Condenser input to filter = 0·5 μF max.	26	NC	F	F	NC	NC	NC	NC	A	—	—	—	**1876**
—	—	—	Condenser input to filter = 0·5 μF max. Plate supply impedance = 20,000 Ω min.	10	NC	H K	NC	H	—	—	—	—	—	A	—	**1877**
	—	—		40	H	H K	—	—	—	—	—	—	—	A	—	**1878**
	—	—		10	NC	R	NC	R	—	—	—	—	—	—	—	**1904**
	—	—		4	NC	R	R	—	—	—	—	—	—	—	—	**1910**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
1927	CURRENT REGULATOR	Current Regulator	F	40 to 120	0·18	—	—	—	—	—	—	—	—
1928	CURRENT REGULATOR	Current Regulator	F	80 to 240	0·18	—	—	—	—	—	—	—	—
1941	CURRENT REGULATOR	Current Regulator	F	80 to 200	0·3	—	—	—	—	—	—	—	—
1945	CURRENT REGULATOR	Current Regulator	F	80 to 120	0·275	—	—	—	—	—	—	—	—
1949	CURRENT REGULATOR	Current Regulator	F	30 to 90	0·3	—	—	—	—	—	—	—	—
1954	CURRENT REGULATOR	Current Regulator	F	100 to 160	0·15	—	—	—	—	—	—	—	—
2050	GAS-FILLED THYRATRON	Relay and Grid-Controlled Rectifier	H	6·3	0·6	R.M.S. 400	—	−6	—	—	—	—	—
2051	GAS-FILLED THYRATRON	For Relay Service	H	6·3	0·6	R.M.S. 220	—	R.M.S. 4·0	—	—	—	—	—
3006	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier	F	4·0	0·08	Max. R.M.S. 40·0	D.C. Output 1·0	—	—	—	—	—	—
3510	VACUUM PHOTO-ELECTRIC CELL	P.E. Cell	PE	—	—	500 Max.	0·003 Max.	—	—	—	—	—	—
3512	VACUUM PHOTO-ELECTRIC CELL	P.E. Cell	PE	—	—	500 Max.	0·005 Max.	—	—	—	—	—	—
3530	GAS-FILLED PHOTO-ELECTRIC CELL	P.E. Cell	PE	—	—	100 Max.	0·002	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Permissible voltage when switching on = 150 V.	10	NC	R	NC	R	—	—	—	—	—	—	—	1927
—	—	—	Permissible voltage when switching on = 240 V.	10	NC	R	NC	R	—	—	—	—	—	—	—	1928
—	—	—		10	NC	R	NC	R	—	—	—	—	—	—	—	1941
				40	R	R	—	—	—	—	—	—	—	—	—	
—	—	—		26	NC	NC	NC	NC	R	NC	NC	R	—	—	—	1945
—	—	—		10	NC	R	NC	R	—	—	—	—	—	—	—	1949
—	—	—		30	NC	R	—	NC	—	NC	—	R	—	—		1954
2000	—	0·26	Grid No. 2 voltage = 0. Plate Circuit Resistance = 2000 Ω. Conditions given are for Relay Service.	30	NC	H	A	NC	G_1	G_2	H	K	—	—	—	2050
2000	—	0·26	Grid No. 2 voltage = 0. Plate Circuit Resistance = 2000 Ω.	30	NC	H	A	NC	G_1	G_2	H	K	—	—	—	2051
—	—	—	For use as "C" Bias Supply Unit.	4	A	F	F	—	—	—	—	—	—	—	—	3006
—	—	—	For 5350 ± 500° A (Green-Yellow). Sensitivity = 3 μA/Lumen. Potassium Cathode.	10	A	NC	NC	NC	—	—	—	—	—	K	—	3510
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 20 μA/Lumen. Caesium Cathode.	10	A	NC	NC	NC	—	—	—	—	—	K	—	3512
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Maximum Plate Current = 0·0075 mA. Caesium Cathode.	36	A	K	—	—	—	—	—	—	—	—	—	3530

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
3533	GAS-FILLED PHOTO-ELECTRIC CELL	P.E. Cell	P E	—	—	100 Max.	0·002	—	—	—	—	—	—
3534	GAS-FILLED PHOTO-ELECTRIC CELL	P.E. Cell	P E	—	—	90 Max.	0·002	—	—	—	—	—	—
3537	GAS-FILLED PHOTO-ELECTRIC CELL	P.E. Cell	P E	—	—	100 Max.	0·002	—	—	—	—	—	—
3538	GAS-FILLED PHOTO-ELECTRIC CELL	P.E. Cell	P E	—	—	100 Max.	0·002	—	—	—	—	—	—
3540	GAS-FILLED PHOTO-ELECTRIC CELL	P.E. Cell	P E	—	—	90 Max.	0·005	—	—	—	—	—	—
3541	GAS-FILLED PHOTO-ELECTRIC CELL	P.E. Cell	P E	—	—	100 Max.	0·002	—	—	—	—	—	—
3543	GAS-FILLED PHOTO-ELECTRIC CELL	P.E. Cell	P E	—	—	90 Max.	0·002	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Maximum Plate Current = 0·0075 mA. Caesium Cathode.	10	A	NC	NC	K	—	—	—	—	—	—	—	3533
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Maximum Plate Current = 0·0075 mA. Caesium Cathode.	8	NC	A	NC	K	—	—	—	—	—	—	—	3534
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Maximum Plate Current = 0·0075 mA. Caesium Cathode.	37	A	K	—	—	—	—	—	—	—	—	—	3537
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Maximum Plate Current = 0·0075 mA. Caesium Cathode.	36	A	K	—	—	—	—	—	—	—	—	—	3538
—	—	—	Operational Range 6500° A to 8000° A (Red-Infra Red). Sensitivity = 125 μA/Lumen at 2600° K.	38	A	K	—	—	—	—	—	—	—	—	—	3540
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen with 1·0 meg. Series Resistor. Caesium Cathode. Maximum Plate Current = 0·0075 mA.	10	A	NC	NC	K	—	—	—	—	—	—	—	3541
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Caesium Cathode. Maximum Plate Current = 0·005 mA.	39	A	K	—	—	—	—	—	—	—	—	—	3543

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
3545	VACUUM PHOTO-ELECTRIC CELL	P.E. Cell	PE	—	—	250 Max.	—	—	—	—	—	—	—
3546	GAS-FILLED PHOTO-ELECTRIC CELL	P.E. Cell	PE	—	—	90 Max.	0·002	—	—	—	—	—	—
4060	ELECTROMETER TRIODE	Valve Voltmeter	F	0·7*	0·6	4	0·14	−2·5	—	—	28	0·5	—
4065	ELECTROMETER TRIODE	Valve Voltmeter	F	1·25	0·013	9	0·1	−2·5	—	—	80	1·7	—
4066	ELECTROMETER TRIODE	Valve Voltmeter	F	1·25	0·015	4·5	0·01	−3	—	—	10	1	—
4357	NEON VOLTAGE STABILIZER	Voltage Stabilizer	COLD	—	—	85 to 100	10 to 40	—	—	—	—	—	—
4376	NEON VOLTAGE STABILIZER	Voltage Stabilizer	COLD	—	—	90 to 100	10 Min.	—	—	—	—	—	—
4377 4496	NEON VOLTAGE STABILIZER	Voltage Stabilizer	COLD	—	—	100 to 115	10 to 30	—	—	—	—	—	—
4624	POWER OUTPUT TRIODE	Class "A" Power Amplifier	F	7·2	1·1	800	35	−90	—	—	2300	7	3000 Ohms
4630	AMPLIFIER TRIODE	A.F. Pre-amplifier	F	4·2	0·25	130	8·5	−8·4	—	—	1300	—	5500 Ohms
4631	AMPLIFIER TRIODE	A.F. Pre-amplifier	F	2·0	0·25	130	0·7	−1·5	—	—	500	—	0·055
4636	R.F. PENTODE	R.F. Amplifier	H	4·0	1·1	200	3·0	−2	100	1·2	2300	—	2·2

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	For Red and Infra Red Radiation. Sensitivity = 20 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Caesium Cathode. Max. Cathode Current Density = 5 μA/cm².	37	A	K	—	—	—	—	—	—	—	—	—	3545
—	—	—	For Red and Infra Red Radiation. Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Caesium Cathode. Max. Cathode Current Density = 7·5 μA/cm².	37	A	K	—	—	—	—	—	—	—	—	—	3546
—	—	—	* Exact value of heater voltage should be adjusted to that indicated on each individual valve. Grid Current < 10^{-14} A.	4	A	F	F	—	—	—	—	—	—	G_1	—	4060
—	—	—	Grid Current < 12·5 x 10^{-14} A.	49	F−	A	F+	G_1	—	—	—	—	—	—	—	4065
—	—	—	Grid Current < 5 x 10^{-15} A.													4066
—	—	—	Starting Voltage 125 V. D.C. Quiescent Current 20 mA. A.C. Resistance = 75 Ω max.	10	NC	K	NC	A	—	—	—	—	—	—	—	4357
—	—	—	Starting Voltage 110 V. D.C. Quiescent Current 45 mA.	35 40	E	E	—	—	—	—	—	—	—	—	—	4376
—	—	—	Starting Voltage 130 V. D.C. max. Quiescent Current 20 mA.	40	E	E	—	—	—	—	—	—	—	—	—	4377
			A.C. Resistance = 250 Ω.	26	NC	NC	NC	NC	K	NC	NC	A	—	—	—	4496
11,000	9	—		11	A	F	F	G_1	—	—	—	—	—	—	—	4624
6000	—	—	Stage gain = 3·6.	6	F	A	G_1	F	—	—	—	—	—	—	—	4630
600,000	—	—	Stage gain = 27.	6	F	A	G_1	F	—	—	—	—	—	—	—	4631
	—	0·006		14	G_2	H	G_1	H	K M G_2	—	—	—	—	A	—	4636

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
4641	POWER OUTPUT TRIODE	Class "B" Power Amplifier (2 Valves)	F	4·0	2·1	1500	Zero Signal 2 x 10 Max. Signal 2 x 41	−144	—	—	—	—	—
4646	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier	F	4·0	1·3	Max. R.M.S. 1000	D.C. Output 75·0 Max.	—	—	—	—	—	—
4652	FULL-WAVE GAS-FILLED RECTIFIER	Full-wave Rectifier	F	4·0	2·4	★	★	—	—	—	—	—	—
4654K	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	6·3	1·35	250	72	−14	275	8·0	8500	—	0·022
4654P		Class "B" Power Amplifier				420 See Note	Zero Signal 2 x 20 Max. Signal 2 x 93	−38	See Note	Zero Signal 2 x 2·2 Max. Signal 2 x 21	—	—	—
4657	AMPLIFIER TRIODE	A.F. Amplifier	H	4·0	1·0	200	1·0	−1·5	—	—	2200	99	0·045
4662	NEON TUNING INDICATOR	Tuning Indicator	COLD	—	—	150 to 170	2·0	—	—	—	—	—	—
4671	AMPLIFIER TRIODE	R.F. Amplifier	H	6·3	0·15	★	★	★	—	—	★	★	★
4672	SHARP CUT-OFF PENTODE	R.F. and A.F. Amplifier	H	6·3	0·15	★	★	★	★	★	★	—	★
4673	SHARP CUT-OFF R.F. PENTODE	R.F. Amplifier	H	4·0	1·35	250	8·0	−2·5	200	1·5	5000	—	1·5
4682	POWER OUTPUT PENTODE	Class "AB" Power Amplifier (2 Valves)	H	4·0	1·0	375	Zero Signal 2 x 24 Max. Signal 2 x 29	See Note	250	Zero Signal 2 x 3·5 Max. Signal 2 x 4·0	—	—	—
4683	POWER OUTPUT TRIODE	Class "AB" Power Amplifier (Two Valves)	F	4·0	0·95	350	Zero Signal 2 x 43 Max. Signal 2 x 46	See Note	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
Plate to Plate 40,000	68	7·0	Fixed Bias Conditions. Total Harmonic Distortion 1·9%. R.M.S. Grid to Grid volts = 210 V.	11	A	F	F	G_1	—	—	—	—	—	—	—	4641
—	—	—	Condenser Input to Filter 12 μF maximum. Plate Supply Impedance = 200 Ω minimum.	11	A	F	F	NC	—	—	—	—	—	—	—	4646
—	—	—	★ *For data and notes refer type* AX1.	10	A^I	F	A^{II}	F	—	—	—	—	—	—	—	4652
3500	8·8	0·8	Total Harmonic Distortion 10%. Cathode Bias Resistor 175 Ω.	30	M	H	NC	G_2	G_1	G_2	H	K	—	A	—	4654K
5000 Plate to Plate	48		Plate Supply Voltage = 425. Series Screen Resistor 500 Ω (425 V. supply). Total Harmonic Distortion 2·5%.	26	NC	H	H	K M	G_2	G_1	G_2	NC	—	A	—	4654F
—	—	3·0		14	A	H	G_1	H	K M	—	—	—	—	—	—	4657
—	—	—	Auxilliary Anode (A^{II}) starting voltage 165-190 V. Auxilliary Anode Current 0·04 to 0·05 mA.	5	NC	A^I	A^{II}	K	—	—	—	—	—	—	—	4662
—	—	1·5	★ *For data and notes refer type* E1C.	13	H	A	G_1	H	K	—	—	—	—	—	—	4671
—	—	0·007	★ *For data and notes refer type* E1F.	22	H	G_2	G_2	H	K	G_1	A	—	—	—	—	4672
—	—	0·12	Plate Current Cut-off at — 6 volts Grid Bias.	26	M	H	H	K	G_2	NC	G_2	A	—	G_1	—	4673
Plate to Plate 15,000	14·0	1·5	R.M.S. Grid to Grid = 50 volts. Cathode Bias Resistor 540 Ω. Total Harmonic Distortion = 5%.	26	NC	H	H	K G_2	NC	NC	G_2	A	—	G_1	—	4682
Plate to Plate 8000	15·6	20	R.M.S. Grid to Grid volts = 102 volts. Cathode Bias Resistor 850 Ω. Total Harmonic Distortion 2·3%.	26	NC	F	F	NC	NC	G_1	NC	A	—	—	—	4683

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
4686	GAS TRIODE (Argon)	Relaxation Oscillator	H	4·0	1·2	Max. Peak 300	Max. Peak 300	—	—	—	—	—	—
4687 4687K 4687A	NEON VOLTAGE STABILIZER	Voltage Stabilizer	COLD	—	—	85 to 100	10 to 40	—	—	—	—	—	—
4688	POWER OUTPUT PENTODE	Class "AB" Power Amplifier (Two Valves)	H	4·0	2·0	375	Zero Signal 2 x 48 Max. Signal 2 x 62	See Note	275	Zero Signal 2 x 5 Max. Signal 2 x 9	—	—	—
4689K 4689P	POWER OUTPUT PENTODE	Class "AB" Power Amplifier (Two Valves)	H	6·3	1·35	★	★	★	★	★	—	—	—
4690	GAS TRIODE (Helium)	Relaxation Oscillator	H	4·0	1·3	Max. Peak 500	Max. Peak 750	—	—	—	—	—	—
4694	POWER OUTPUT PENTODE	Class "AB" Power Amplifier (Two Valves)	H	6·3	0·9	400	Zero Signal 2 x 22 Max. Signal 2 x 25	See Note	425	Zero Signal 2 x 2·8 Max. Signal 2 x 6·2	—	—	—
4695	REMOTE CUT-OFF R.F. PENTODE	R.F. Amplifier	H	6·3	0·15	250	6·7	−3	100	2·7	1700	—	0·6
4699 4699N	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	6·3	1·0	250	72	See Note	250	8·0	14,500	—	0·02
5861	AMPLIFIER TRIODE	U.H.F. Amplifier	H	6·3	0·4	250	20	−3·5	—	—	6000	30	—
5882	AMPLIFIER TRIODE	U.H.F. Amplifier	F	1·25	0·2	★	★	★	—	—	★	★	—
5920	TWIN TRIODE	A.F. Amplifier	H	6·3	0·4	100	8·5	−1·5	—	—	5900	26	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	2·7	Arc voltage = 17 V. Mean Plate Current 3·0 mA. Max. freq. 50,000 cycles/sec.	26	NC	H	H	K	NC	NC	NC	A	—	G_1	—	4686
—	—	—	Starting voltage 115 V. D.C. Quiescent Current 20 mA.	26	NC	NC	NC	NC	K	NC	NC	A	—	—	—	4687
				30	NC	K	NC	NC	A	NC	NC	NC	—	—	—	4687K
				10	A	NC	K	NC	—	—	—	—	—	—	—	4687A
Plate to Plate 6500	28·5	1·0	R.M.S. Grid to Grid volts = 32 volts. Cathode Bias Resistor 165 Ω. Total Harmonic Distortion 2·3%.	26	NC	H	H	K G_3	NC	G_1	G_2	A	—	—	—	4688
★	★	0·8	★ *For data and notes refer type* 4688.	30	M	H	A	G_2	G_1	NC	H	K G_3	—	—	—	4689K
				26	NC	H	H	K G_2 M	NC	G_1	G_2	A	—	—	—	4689P
—	—	—	Arc voltage = 50 volts. Mean Plate Current 10 mA. Max. freq. 150,000 cycles/sec. Grid to Cathode capacity 3·7 μμF.	26	NC	H	H	K S	NC	G_1	NC	NC	—	A	—	4690
Plate to Plate 20,000	13·0	0·8	R.M.S. Grid to Grid volts = 18 volts. Cathode Bias Resistor 315 Ω. Total Harmonic Distortion 2·3%.	26	NC	H	H	K G_3 M	NC	G_1	G_2	A	—	—	—	4694
—	—	0·007	Mutual Conductance = 2 μmhos at — 46 volts Grid Bias.	22	H	G_2	G_3	H	K	G_1	A	—	—	—	—	4695
3500	8·0	0·7	Cathode Bias Resistor 90 Ω. Total Harmonic Distortion 10%.	26	NC	H	H	K G_3 M	NC	G_1	G_2	A	—			4699
					NC	H	H	K G_2	NC	G_1	G_2	A	—	—	—	4699N
—	—	1·1	Disc-seal Triode for use up to 3000 Mc/s.	43	H	H K	G_1	A	—	—	—	—	—	—	—	5861
—	★	1·5	★ *For data and notes refer type* 1E3.	32	G_1	NC	F	F+	F—	NC	NC	A	NC	—	—	5882
	—	$3·8_{t1}$ $3·7_{t2}$	Values are for each unit. Long life tube	21	A^I	A^{II}	H	H	$G_1{}^{II}$	$G_1{}^I$	K	—	—	—	—	5920

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
6007	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	1·25	0·013	22·5 Supply	Zero Signal 0·5 Max. Signal 0·34	0	22·5	Zero Signal 0·095 Max. Signal 0·09	420	—	0·4
						45 Supply	0·42	See Note	45	0·08	—	—	—
6008	SHARP CUT-OFF PENTODE	A.F. Amplifier	F	0·625	0·0133	22·5	0·05	−1·15	18	0·01	100	—	4·0
6084	SHARP CUT-OFF PENTODE	Low-noise A.F. Pre-amplifier	H	6·3	0·3	250	3·0	−2	100	0·55	1850	—	2·0
6085	TWIN TRIODE	A.F. and Class "A" Power Amplifier	H	12·6 6·3	0·3 0·6	250	6·0	−5·6	—	—	2900	32	0·011
6086	TELEPHONE REPEATER AMPLIFIER PENTODE	Wideband Telephone Repeater	H	18·0	0·1	210	10	See Note	120	2·2	9000	—	0·4
7475	NEON VOLTAGE STABILIZER	Voltage Stabilizer	COLD	—	—	90 to 110	1·0 to 8·0	—	—	—	—	—	—
9001	SHARP CUT-OFF PENTODE	R.F. and A.F. Amplifier	H	6·3	0·15	250	2·0	−3	100	0·7	1400	—	>1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
*	0·0018	0·2	Primarily intended for hearing aids. * High impedance choke shunted by 0·1 meg. resistor. Grid leak 10·0 meg. Total Harmonic Distortion 10%.	46	F+ G_3	A	G_2	G_1	F−	—	—	—	—	—	—	6007
*	0·006		Bias resistor 5600 Ω. * High impedance choke shunted by 0·1 meg. resistor. Grid leak 3·0 meg.													
—	—	0·2	Primarily intended for hearing aids. Plate current cut-off at − 2·3 volts grid bias. As R.C. Amplifier (22·5 V. supply). Following grid leak 5·0 meg. Plate resistor 1·0 meg. Screen resistor 3·9 meg. Grid leak 10·0 meg. Gain = 31.	46	F+ G_3	A	G_2	G_1	F−	—	—	—	—	—	—	6008
—	—	0·02	As R.C. Amplifier (250 V. supply). Plate resistor 0·33 meg. Screen resistor 1·5 meg. Cathode resistor 2200 Ω. Gain = 210. Plate current cut-off at − 10 V. grid bias. Ruggedised, long-life valve.	32	G_2	S	K	H	H	A	S	G_3	G_1	—	—	6084
15,000	0·28	$2·6_{t1}$ $2·75_{t2}$	As R.C. Amplifier (400 V. supply). Following grid leak 0·33 meg. Plate resistor 0·1 meg. Cathode resistor 2200 Ω. Gain = 24. % Values for each unit. Ruggedised, long-life tube.	32	A'	G_1'	K'	H	H	A''	G_1''	K''	H_t	—	—	6085
—	—	0·015	Cathode bias resistor 165Ω. Plate current cut-off at − 5 volts grid bias. Long-life valve.	32	G_2	G_1	K	H	H	A	IC	IC	G_3	—	—	6086
—	—	—	Starting voltage 140 V. D.C. Quiescent Current 4·0 mA. A.C. Resistance = 700 Ω.	10	A	NC	K	NC	—	—	—	—	—	—	—	7475
—	—	0·01	Plate Current Cut-off at − 6 volts Grid Bias. As R.C. Amplifier (250 V. supply). Plate Resistor 0·25 meg. Screen voltage 50 V. D.C. Grid Bias − 2·1 V. D.C. Plate Current 0·5 mA. Gain = 100.	21	G_1	K	H	H	A	G_2	K G_2 IS	—	—	—	—	9001

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
9002	**DETECTOR OSCILLATOR AMPLIFIER TRIODE**	R.F. Amplifier	H	6·3	0·15	250 90	6·3 2·5	−7 −2·5	— —	— —	2200 1700	25 25	0·0114 0·0147
9003	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	250	6·7	−3	100	2·7	1800	—	0·7
9004	**U.H.F. DIODE**	Detector, Rectifier	H	6·3	0·15	Max. R.M.S. 117	D.C. Output 5·0 Max.	—	—	—	—	—	—
9005	**U.H.F. DIODE**	Detector, Rectifier	H	3·6	0·165	Max. R.M.S. 117	D.C. Output 1·0 Max.	—	—	—	—	—	—
9003	**U.H.F. DIODE**	Detector, Rectifier	H	6·3	0·15	R.M.S. 270	D.C. Output 5·0	—	—	—	—	—	—
13201 13201A	**NEON VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	90 to 110	15 to 200	—	—	—	—	—	—
18004	**TELEPHONE REPEATER AMPLIFIER TRIODE**	Class "A" Power Amplifier	F	4·4	0·97	130	22	−25	—	—	1000	2·3	2300 Ohms
18013	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-Amplifier	H	4·0	1·3	200	8·0	See Notes	200	1·5	5000	—	1·0
		Class "A" Power Amplifier				200	8·0	See Notes	200	1·5	5000	—	1·0
18014	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-Amplifier	H	4·0	1·6	200	35·0	See Notes	200	4·6	8000	—	0·05
		Class "A" Power Amplifier				200	35·0	See Notes	200	4·6	8000	—	0·05

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	— —	1·4		21	A	K	H	H	A	G_1	K	—	—	—	—	**9002**
—	—	0·01	Mutual Conductance = 2 μmhos at — 45 volts Grid Bias.	21.	G_1	K	H	H	A	G_2	K G_2 IS	—	—	—	—	**9003**
—	—	—		13	H	A	K	H	NC	—	—	—	—	—	—	**9004**
—	—	—		13	H	K	A	H	IC to pin 4	—	—	—	—	—	—	**9005**
—	—	—	Plate Supply Impedance = 100 Ω minimum.	21	A	K	H	H	A	NC	K	—	—	—	—	**9006**
—	—	—	Overall length 154 m.m. Starting voltage 140 V. D.C. Quiescent Current 100 mA. A.C. Resistance = 90 Ω. Overall length 174 m.m.	10	A	NC	K	NC	—	—	—	—	—	—	—	**13201** **13201A**
2100	0·2	4·5	Total Harmonic Distortion 5%. Long-life valve.	6	F	A	G_1	F	—	-	—	—	—	—	—	**18004**
20,000*	—	0·012	* Choke or transformer coupling. Cathode Bias Resistor 265 Ω. Stage gain — 100. Plate Current Cut-off at — 7 volts Grid Bias.	23	K	H	H	G_2	A	M	G_2	—	—	G_1	—	**18013**
30,000	0·1		Cathode Bias Resistor 265 Ω. Total Harmonic Distortion 5%. Long-life valve.													
8000*	—	0·6	* Choke or transformer coupling. Cathode Bias Resistor 125 Ω. Stage gain = 56. Plate Current Cut-off at — 15. volts Grid Bias.	23	K G_2	H	H	G_2	NC	M	A	—	—	G_1	—	**18014**
8000	0·8		Cathode Bias Resistor 125 Ω. Total Harmonic Distortion 3%. Long-life valve.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
18015	TELEPHONE REPEATER AMPLIFIER PENTODE	Pre-Amplifier	H	21·0	0·285	125	4·5	See Notes	125	1·3	5500	—	0·55
		Class "A" Power Amplifier				125	8·0	See Notes	125	2·5	8300	—	0·35
18016	TELEPHONE REPEATER AMPLIFIER PENTODE	Pre-Amplifier	H	21·0	0·335	125	48	See Notes	125	9·5	9000	—	0·0165
		Class "A" Power Amplifier				125	48	See Notes	125	9·5	9000	—	0·0165
18040	TELEPHONE REPEATER AMPLIFIER PENTODE	Pre-Amplifier	H	18·0	0·27	210	15	See Note	210	4·0	10,000	—	0·3
		Class "A" Power Amplifier				210	20	See Note	210	5·3	11,000	—	0·25
18042	TELEPHONE REPEATER AMPLIFIER PENTODE	Wide-band Telephone Repeater	H	18·0	0·1	★	★	★	★	★	★	—	★
18043	SHARP CUT-OFF PENTODE	Wide-band Telephone Repeater	H	6·3	0·3	★	★	★	★	★	★	—	★
18045	TELEPHONE REPEATER AMPLIFIER PENTODE	Pre-Amplifier and Class "A" Power Amplifier	H	18·0	0·16	★	★	★	★	★	★	—	★
A409	AMPLIFIER TRIODE	Amplifier	F	4·0	0·065	150	3·5	−9	—	—	900	9	0·01
A415	AMPLIFIER TRIODE	Amplifier	F	4·0	0·085	150	4·0	−4·5	—	—	1500	15	0·01
A425	AMPLIFIER TRIODE	Amplifier	F	4·0	0·065	200	0·25	−2·5	—	—	—	25	0·08
A609	AMPLIFIER TRIODE	Amplifier	F	6·0	0·06	150	4·0	−9	—	—	1500	9	6000 Ohms

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES.	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
16,000*	—	0·02	* Choke or transformer coupling. Cathode Bias Resistor 440 Ω. Stage gain = 50. Plate Current Cut-off at — 4·5 volts Grid Bias.	28	K	H	H	G_2 S	A	M	G_2	—	—	G_1	—	18015
30,000	0·1		Cathode Bias Resistor 200 Ω. Total Harmonic Distortion 5%. Long-life valve.													
3300*	—	0·25	* Choke or transformer coupling. Cathode Bias Resistor 115 Ω. Stage gain = 20. Plate Current Cut-off at — 19 volts Grid Bias.	23	K G_2 S	H	H	G_2	NC	M	A	—	—	G_1	—	18016
3300	0·8		Cathode Bias Resistor 115 Ω. Total Harmonic Distortion 3%. Long-life valve.													
20,000*	—	0·02	* Choke or transformer coupling. Cathode Bias Resistor 185 Ω. Stage gain = 170. Plate Current Cut-off at — 7. volts Grid Bias.	29	H	A	G_2	G_2 S_1	S_2	G_1	K	H	—	—	—	18040
15,000	2·1		Cathode Bias Resistor 120 Ω. Total Harmonic Distortion 20%. Long-life valve.													
—	—	0·015	★ *For data and notes refer type* 6086.	32	G_2	G_1	K	H	H	A	IC	IC	G_2	—	—	18042
—	—	0·015	★ *For data and notes refer type* E83F/18043.	32	G_2	G_1	K	H	H	A	IC	IC	G_2 S	—	—	18043
★	★	—	★ *For data and notes refer type* 18040.	32	NC	G_1	K	H	H	NC	A	G_2	G_2	—	—	18045
—	—	4·0		10	A	F	G_1	F	—	—	—	—	—	—	—	A409
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
—	—	4·5		10	A	F	G_1	F	—	—	—	—	—	—	—	A415
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
320,000	—	3·0		10	A	F	G_1	F	—	—	—	—	—	—	—	A425
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
—	—	—		10	A	F	G_1	F	—	—	—	—	—	—	—	A609
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance μmhos	Amplification factor	Plate resistance Meg-ohms
			TYPE	Voltage Volts	Current Amps								
A615	**AMPLIFIER TRIODE**	Amplifier	F	6·0	0·08	150	4·0	−4·5	—	—	2400	15	6250 Ohms
A630	**AMPLIFIER TRIODE**	Amplifier	F	6·0	0·06	150	0·7	−1·5	—	—	1500	30	0·02
AB1	**TWIN DIODE**	Detector Rectifier	H	4·0	0·65	★	★	—	—	—	—	—	—
AB2	**TWIN DIODE**	Detector Rectifier	H	4·0	0·65	Max. R.M.S. 200 per Plate	D.C. Output 0·8 per Plate	—	—	—	—	—	—
ABC1	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	4·0	0·65	250	4·0	−7	—	—	2000	27	0·0135
ABL1	**DUO-DIODE POWER OUTPUT PENTODE**	Detector, Class "A" Power Amplifier	H	4·0	2·4	★	★	★	★	★	★	—	★
AC2	**AMPLIFIER TRIODE**	Amplifier	H	4·0	0·65	250	6·0	−5·5	—	—	2500	30	0·012
AC044	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	4·0	1·0	300	50	−38	—	—	5000	—	1200 Ohms
AD1	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	4·0	0·95	250	60	−45	—	—	6000	4	670 Ohms
AF2	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	4·0	1·1	200	4·25	−2	100	1·8	2500	—	1·4
AF3	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	4·0	0·65	250	8·0	−3	100	2·6	1800	—	1·2
AF7	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	4·0	0·65	250	3·0	−2	100	1·1	2100	—	2·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—		10	A	F	G_1	F	—	—	—	—	—	—	—	A615
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
—	—	—		10	A	F	G_1	F	—	—	—	—	—	—	—	A630
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
—	—	—	★ *For data and notes refer type* AB2.	14	D_1	H	M	H	K	—	—	—	—	D_2	—	AB1
—	—	—		12	D_1	D_2	H	H	K M	—	—	—	—	—	—	AB2
—	—	1·7	As R.C. Amplifier (250 V. supply). Plate Resistor 0·2 meg. Cathode Resistor 4000 Ω. Gain = 21.	26	M	H	H	K	D_2	D_1	NC	A	—	G_1	—	ABC1
★	★	—	★ *For data and notes refer type* EBL1.	26	NC	H	H	M K G_2	D_1	D_2	G_2	A	—	G_1	—	ABL1
—	—	1·7	As R.C. Amplifier (250 V. supply). Plate Resistor 0·32 meg. Cathode Resistor 8000 Ω. Gain = 19.	26	M	H	H	K	NC	NC	NC	A	—	G_1	—	AC2
2300	3·5	—		10	A	F	G_1	F	—	—	—	—	—	—	—	AC044
				8	F	A	G_1	F	—	—	—	—	—	—	—	
2300	4·2	23	Total Harmonic Distortion 1·5%.	26	NC	F	F	NC	NC	G_1	NC	A	—	—	—	AD1
—	—	0·006	Mutual Conductance = 2 μmhos at − 22 volts Grid Bias.	14	G_2	H	G_1	H	K M G_2	—	—	—	—	A	—	AF2
				20	H	K	G_2	M	G_1	NC	H	—	—	A	—	
—	—	0·003	Mutual Conductance = 2 μmhos at − 55 volts Grid Bias.	26	M	H	H	K	G_2	NC	G_2	A	—	G_1	—	AF3
—	—	0·003	Plate Current Cut-off at − 3 volts Grid Bias. As R.C. Amplifier (250 V. supply). Plate Resistor 0·32 meg. Screen Resistor 0·8 meg. Cathode Resistor 4000 Ω. Gain = 157.	26	M	H	H	K	G_2	NC	G_2	A	—	G_1	—	AF7

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
AH1	HEXODE	Frequency Mixer	H	4·0	0·65	250	1·7	(G_1) −2	(G_{2+4}) 80	2·6	Conv. 550	—	2·0
		R.F. Amplifier				250	3·0	(G_1 & G_3) −2	80	1·1	1800	—	2·0
AK1	OCTODE	Frequency Converter	H	4·0	0·65	200	1·6	(G_4) −1·5	(G_{3+5}) 70	3·8	Conv 600	—	1·5
AK2	OCTODE	Frequency Converter	H	4·0	0·65	250	1·6	(G_4) −1·5	(G_{3+5}) 70	3·8	Conv. 600	—	1·6
AL1	POWER OUTPUT PENTODE	Class "A" Amplifier	F	4·0	1·1	250	36 0	−15	250	6·8	2800	—	0·043
AL2 AL2X	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	4·0	1·0	250	36·0	−25	250	5·0	2600	—	0·06
AL3 AL4	POWER OUTPUT PENTODE	Class "A" "AB" Power Amplifier	H	4·0	1·75	★	★	★	★	★	★	—	★
AL5	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	4·0	2·0	★	★	★	★	★	★	—	★
AM1	TUNING INDICATOR WITH TRIODE	Tuning Indicator	H	4·0	0·3	Target Volts 250	Target Current 0·13	−5 For Shadow Angle 0°	—	—	—	—	—
AX1	FULL-WAVE GAS-FILLED RECTIFIER	Full-wave Rectifier	F	4·0	2·4	Max. R.M.S. 2 x 500	D.C. Output 125·0 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·003	Conversion Conductance = 2 μmhos at — 24 volts Grid (G_1) Bias. Oscillator Injector Grid (G_3) — 12 volts Bias. Osc. Grid (G_3) volts = 9 V. R.M.S.	26	M	H	H	K	G_3	G_4	G_2	A	—	G_1	—	AH1
—	—		Mutual Conductance = 2 μmhos at — 20 volts Grid Bias (G_1 and G_3 simultaneously biased).													
—	—	0·06	Conversion Conductance = 2 μmhos at — 25 volts Grid (G_4) Bias. Grid No. 2 90 V. at 2·0 mA. Osc. Grid (G_1) Current 0·19 mA. Osc. Grid Resistor 50,000 Ω.	24 20	A H	K M G_6 K M	H A	H G_2	G_3 G_5 G_1	G_1 G_3 G_5	G_2 H	— —	— —	G_4 G_4	— —	AK1
—	—	0·06	Conversion Conductance = 2 μmhos at — 25 volts Grid (G_4) Bias. Grid No. 2 90 V. at 2·0 mA. Osc. Grid (G_1) Current 0·19 mA. Osc. Grid Resistor 50,000 Ω.	26	M	H	H	K G_6	G_2	G_1	G_3 G_5	A	—	G_4		AK2
7000	3·1	—	Total Harmonic Distortion 6%. Cathode Bias Resistor 350 Ω.	26	NC	F G_3	F	NC	NC	G_1	G_2	A	—	—	—	AL1
7000	3·8	0·7	Total Harmonic Distortion = 10%. Cathode Bias Resistor 625 Ω.	26 26	NC NC	H H	H H	K G_3 K G_3	NC NC	NC G_1	G_2 G_2	A A	— —	G_1 —	— —	AL2 AL2X
★	★	0·8	★ *For data and notes refer type* EL33.	26	NC	H	H	K G_3	NC	G_1	G_2	A	—	—	—	AL3 AL4
★	★	0·8	★ *For data and notes refer type* EL5.	26	NC	H	H	K G_3	NC	G_1	G_2	A	—	—	—	AL5
—	—	—	Triode Plate Resistor 2·0 meg. Triode Plate Current 0·095 mA.	26	NC	H	H	K	NC	G_1[t]	T	A[t]	—	—	—	AM1
	—	—	Condenser Input to Filter 64 μF max. Plate Supply Impedance per Plate = 200 Ω min. Tube voltage drop 15 volts max.	10	A[I]	F	A[II]	F	—	—	—	—	—	—	—	AX1

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
AX50	FULL-WAVE GAS-FILLED RECTIFIER	Full-wave Rectifier	F	4·0	3·75	Max. R.M.S. 2 x 500	D.C. Output 275·0 Max.	—	—	—	—	—	—
AZ1	FULL-WAVE VACUUM RECTIFIER	Full-wave Rectifier	F	4·0	1·1	★	★	—	—	—	—	—	—
AZ3	FULL-WAVE VACUUM RECTIFIER	Full-wave Rectifier	H	4·0	2·0	Max. R.M.S. 2 x 500	D.C. Output 120·0 Max.	—	—	—	—	—	—
AZ4	FULL-WAVE VACUUM RECTIFIER	Full-wave Rectifier	F	4·0	2·3	R.M.S. 2 x 300 2 x 500	D.C. Output 200·0 120·0	—	—	—	—	—	—
AZ11	FULL-WAVE VACUUM RECTIFIER	Full-wave Rectifier	F	4·0	1·1	★	★	—	—	—	—	—	—
AZ12	FULL-WAVE VACUUM RECTIFIER	Full-wave Rectifier	F	4·0	2·3	★	★	—	—	—	—	—	—
AZ31	FULL-WAVE VACUUM RECTIFIER	Full-wave Rectifier	F	4·0	1·1	R.M.S. 2 x 300 2 x 500	D.C. Output 100 60	—	—	—	—	—	—
AZ41	FULL-WAVE VACUUM RECTIFIER	Full-wave Rectifier	F	4·0	0·72	R.M.S. 2 x 300 2 x 500	D.C. Output 70 60	—	—	—	—	—	—
AZ50	FULL-WAVE VACUUM RECTIFIER	Full-wave Rectifier	F	4·0	3·0	Max. R.M.S. 2 x 500	D.C. Output 250	—	—	—	—	—	—
B240	TWIN POWER OUTPUT TRIODE	Class "B" Power Amplifier	F	2·0	0·2	150	Zero Signal 2 x 15	0	—	—	—	—	—
B405	POWER OUTPUT TRIODE	Class "A" Power Amplifier	F	4·0	0·15	150	11·0	−18	—	—	1600	5	3000 Ohms
B406	POWER OUTPUT TRIODE	Class "A" Power Amplifier	F	4·0	0·1	150	8·0	−15	—	—	1300	6	4500 Ohms

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Condenser Input to Filter 64 μF max. Plate Supply Impedance per Plate = 200 Ω min. Tube voltage drop 15 volts max.	10	A^I	F	A^{II}	F	—	—	—	—	—	—	—	**AX50**
—	—	—	★ *For data and notes refer type* AZ31.	26	NC	F	F	NC	A^I	NC	NC	A^{II}	—	—	—	**AZ1**
—	—	—		26	NC	H	H	K	A^{II}	NC	NC	A^I	—	—	—	**AZ3**
—	—	—	Condenser Input to Filter 60 μF max. Plate Supply Impedances per Plate = 60 Ω min. and 100 Ω min., respectively.	26	NC	F	F	NC	A^{II}	NC	NC	A^I	—	—	—	**AZ4**
—	—	—	★ *For data and notes refer type* AZ31.	27	A^I	NC	NC	NC	F	F	NC	A^{II}	—	—	—	**AZ11**
—	—	—	★ *For data and notes refer type* AZ4.	27	A^I	NC	NC	NC	F	F	NC	A^{II}	—	—	—	**AZ12**
—	—	—	Condenser Input to Filter 60 μF max. Plate Supply Impedance per Plate = 60 Ω min. and 100 Ω min., respectively.	30	NC	F	—	A^I	—	A^{II}	—	F	—	—	—	**AZ31**
—	—	—	Condenser Input to Filter 50 μF max. Plate Supply Impedance per Plate = 100 Ω min. and 200 Ω min., respectively.	28	IC	A^I	IC	IC	IC	A^{II}	F	F	—	—	—	**AZ41**
—	—	—	Condenser Input to Filter 64 μF max. Plate Supply Impedance per Plate = 200 Ω min.	10	A^I	F	A^{II}	F	—	—	—	—	—	—	—	**AZ50**
Plate to Plate 14,000	1·3	—	Total Harmonic Distortion 10%.	24	A^{II}	$G_1{}^I$	F	F	$G_1{}^{II}$	A^I	NC	—	—	—	—	**B240**
				17	F+	A^{II}	$G_1{}^{II}$	$G_1{}^I$	A^I	F−	—	—	—	—	—	
5000	0·5	—		10	A	F	G_1	F	—	—	—	—	—	—	—	**B405**
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
7000	0·3	—		10	A	F	G_1	F	—	—	—	—	—	—	—	**B406**
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
B409	POWER OUTPUT TRIODE	Class "A" Power Amplifier	F	4·0	0·15	250	12·0	−16	—	—	1800	9	5000 Ohms
B443	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	4·0	0·15	250	12·0	−19	150	2·4	1300	—	0·045
B605	POWER OUTPUT TRIODE	Class "A" Power Amplifier	F	6·0	0·12	150	9·0	−18	—	—	1800	5	2800 Ohms
C1	CURRENT REGULATOR	Current Regulator	F	80 to 200	0·2	—	—	—	—	—	—	—	—
C2	CURRENT REGULATOR	Current Regulator	F	35 to 100	0·2	—	—	—	—	—	—	—	—
C3	CURRENT REGULATOR	Current Regulator	F	100 to 200	0·2	—	—	—	—	—	—	—	—
C8	CURRENT REGULATOR	Current Regulator	F	80 to 200	0·2	—	—	—	—	—	—	—	—
C9	CURRENT REGULATOR	Current Regulator	F	35 to 100	0·2	—	—	—	—	—	—	—	—
C10	CURRENT REGULATOR	Current Regulator	F	35 to 100	0·2	—	—	—	—	—	—	—	—
C12	CURRENT REGULATOR	Current Regulator	F	80 to 200 and 35 to 100	0·2 0·2	— —	— —	— —	— —	— —	— —	— —	— —
C243N	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	2·0	0·2	150	9·5	−4·5	150	2·2	2400	—	0·075
C405	POWER OUTPUT TRIODE	Class "A" Power Amplifier	F	4·0	0·3	250	20·0	−32	—	—	1900	5	2600 Ohms
C408	AMPLIFIER TRIODE	Amplifier	F	4·0	0·25	150	14·0	−7	—	—	2700	8	3000 Ohms
C443	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	4·0	0·25	300	20·0	−25	200	4·5	1700	—	0·037

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
12,000	0·65	—	Total Harmonic Distortion 5%.	10	A	F	G_1	F	—	—	—	—	—	—	—	B409
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
20,000	1·35	—	Total Harmonic Distortion 10%.	14	A	F	G_1	F	G_2	—	—	—	—	—	—	B443
5000	0·5	—		10	A	F	G_1	F	—	—	—	—	—	—	—	B605
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
—	—	—	Type C1 can be replaced by type C8 provided pins 1 and 2 on socket are not used.	26	NC	NC	NC	NC	R	NC	NC	R	—	—	—	C1
—	—	—		26	NC	NC	NC	NC	R	NC	NC	R	—	—	—	C2
—	—	—	Pins 1 and 2 tied together in base.	26	J	J	NC	NC	R	NC	NC	R	—	—	—	C3
—	—	—	Pins 1 and 2 tied together in base.	26	J	J	NC	NC	R	NC	NC	R	—	—	—	C8
—	—	—	Pins 3, 4 and 6 connected in base. Pins 7 and 8 connected in base. Type C9 may be replaced by C10 provided pin 2 on socket is not used.	26	NC	NC	J_1	J_1	R	J_1	J_2	J_2 R	—	—	—	C9
—	—	—	Pins 2, 3, 4 and 6 connected in base. Pins 7 and 8 connected in base. For replacement consider type C9.	26	NC	J_1	J_1	J_1	R	J_1	J_2	J_2 R	—	—	—	C10
— —	— —	—	30-200 V. 0·2 A pins 5 and 8. 35-100 V. 0·2 A pins 5 and 7.	26	NC	NC	NC	NC	R_1 R_2	NC	R_2	R_1	—	—	—	C12
15,000	0·58	—	Total Harmonic Distortion 10%.	14	A	F	G_1	F	G_2	—	—	—	—	—	—	C243N
				15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	
5200	1·1	4·8		10	A	F	G_1	F	—	—	—	—	—	—	—	C405
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
—	—	—	For use in Valve Voltmeters and other measuring instruments.	10	A	F	NC	F	—	—	—	—	—	G_1	—	C408
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
15,000	2·8	1·3	Total Harmonic Distortion 10%.	10	A	F	G_1	F	G_2	—	—	—	—	—	—	C443
				15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
C603	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	6·0	0·25	180	20·0	−40·5	—	—	1700	3	1750 Ohms
CBC1	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	13·0	0·2	250	4·0	−7	—	—	2000	27	0·0135
CBL1	**DUO-DIODE POWER OUTPUT PENTODE**	Detector Class "A" Power Amplifier	H	44·0	0·2	200	45·0	−8·5	200	6·0	8000	—	0·04
CBL6	**DUO-DIODE POWER OUTPUT PENTODE**	Detector Class "A" Power Amplifier	H	44·0	0·2	200 100	40 45	−9·2 −8	100 100	9 12	6200 6500	— —	0·037 0·02
CBL31	**DUO-DIODE POWER OUTPUT PENTODE**	Detector Class "A" Power Amplifier	H	44·0	0·2	200	45	−8·5	200	6·0	8000	—	0·035
CC1	**AMPLIFIER TRIODE**	Amplifier	H	13·0	0·2	200	4·6	−3·7	—	—	2000	50	0·025
CC2	**AMPLIFIER TRIODE**	Amplifier	H	13·0	0·2	200	6·0	−4	—	—	2500	30	0·012
CCH35	**TRIODE HEXODE**	Frequency Converter	H	7·0	0·2	★	★	★	★	★	★	—	★
CF1	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	13·0	0·2	200	3·0	−2	100	0·9	3200	—	0·7
CF2	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	13·0	0·2	200	4·5	−2	100	1·4	2000	—	1·4
CF3	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	13·0	0·2	200	8·0	−3	100	2·6	1800	—	0·9
CF7	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	13·0	0·2	200	3·0	−2	100	1·1	2100	—	2·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
4800	0·79	—		10 8	A F+	F A	G_1 G_1	F- F—	— —	— —	— —	— —	— —	— —	— —	**C603**
—	—	—	As R.C. Amplifier. Plate Resistor 0·1 meg. Cathode Resistor 8000 Ω. Gain = 14.	26	M	H	H	K	D_2	D_1	NC	A	—	G_1	—	**CBC1**
4500	4·0	1·0	Total Harmonic Distortion 10%.	26	NC	H	H	M K G_2	D_1	D_2	G_2	A	—	G_1	—	**CBL1**
5000 2200	3·8 1·8	0·5	Total Harmonic Distortion 10% in each case.	26	NC	H	H	M K G_2	D_1	D_2	G_2	A	—	G_1	—	**CBL6**
4500	4·0	—	Total Harmonic Distortion 10%.	30	M	H	A	D_1	D_2	G_2	H	K G_2	—	G_1	—	**CBL31**
—	—	—		26	M	H	H	K	NC	NC	NC	A	—	G_1	—	**CC1**
—	—	1·7	As R.C. Amplifier (250 V. supply). Plate Resistor 0·32 meg. Cathode Resistor 8000 Ω. Gain = 19.	26	M	H	H	K	NC	NC	NC	A	—	G_2	—	**CC2**
—	—	0·003	★ *For data and notes refer type* ECH35.	30	M	H	A^h	$G_3{}^h$ $G_4{}^h$	$G_1{}^t$ $G_3{}^h$	A^t	H	K	—	$G_1{}^h$	—	**CCH35**
—	—	0·003	Plate Current Cut-off at — 4·5 V. Grid Bias. As R.C. Amplifier (200 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·25 meg. Cathode Resistor 4000 Ω. Gain = 135.	26	M	H	H	K	G_2	NC	G_2	A	—	G_1	—	**CF1**
—	—	0·003	Mutual Conductance = 2 μmhos at — 22 volts Grid Bias.	26	M	H	H	K	G_2	NC	G_2	A	—	G_1	—	**CF2**
—	—	0·003	Mutual Conductance = 2 μmhos at — 55 volts Grid Bias.	26	M	H	H	K	G_2	NC	G_2	A	—	G_1	—	**CF3**
—	—	0·003	Plate Current Cut-off at — 5 V. Grid Bias. As R.C. Amplifier (200 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·25 meg. Cathode Resistor 4000 Ω. Gain = 135.	26	M	H	H	K	G_2	NC	G_2	A	—	G_1	—	**CF7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
CF50	**MICROPHONE PRE-AMPLIFIER PENTODE**	A.F. Amplifier	H	30·0	0·2	250	1·5	−2	100	0·3	3300	—	2·5
CK1	**OCTODE**	Frequency Converter	H	13·0	0·2	200	1·6	(G_4) −1·5	(G_{s+5}) 70	3·8	Conv. 600	—	1·5
CL1	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	13·0	0·2	250	20	−23	250	2·0	1900	—	0·08
CL2	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	24·0	0·2	200	40	−19	100	5·0	3100	—	0·023
CL4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	33·0	0·2	★	★	★	★	★	★	—	★
CL6	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	35·0	0·2	200	45	See Note	100	5·5	8000	—	0·022
CL33	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	33·0	0·2	200	45	−8·5	200	6·0	8000	—	0·035
CY1	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	20·0	0·2	Max. R.M.S. 250	D.C. Output 80 Max.	—	—	—	—	—	—
CY2	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	30·0	0·2	★	★	—	—	—	—	—	—
CY31	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	20·0	0·2	Max. R.M.S. 250	D.C. Output 120 Max.	—	—	—	—	—	—
CY32	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	30·0	0·2	Max. R.M.S. 250	D.C. Output 120 Max.	—	—	—	—	—	—
DA50	**DIODE**	Rectifier	F	1·2	0·3	125 Max.	0·2 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No
—	—	0·03	As R.C. Amplifier (250 V. supply). Following Grid Leak 0·7 meg. Plate Resistor 0·3 meg. Screen Resistor 0·9 meg. Cathode Resistor 2000 Ω. Gain = 315.	20	K G_3	H	H	K G_2	M	NC	G_2	A	—	G_1	—	**CF50**
—	—	0·06	Conversion Conductance = 2 μmhos at — 25 volts Grid (G_4) Bias. Grid No. 2 90 V. at 2·0 mA. Osc. Grid (G_1) Current 0·19 mA. Osc. Grid Resistor 50,000 Ω.	20	M	H	H	K G_5	G_3	G_1	G_2 G_5	A	—	G_4	—	**CK1**
12,500	1·7	—		26	NC	H	H	K G_2	NC	NC	G_2	A	—	G_1	—	**CL1**
5000	3·0	1·5	Total Harmonic Distortion 10%.	26	NC	H	H	K G_2	NC	NC	G_2	A	—	G_1	—	**CL2**
★	★	1·0	★ *For data and notes refer type* CL33.	26	NC	H	H	K G_2	NC	NC	G_2	A	—	G_1	—	**CL4**
4500	4·0	0·5	Self Bias only. Cathode Bias Resistor 190 Ω. Total Harmonic Distortion 10%.	26	NC	H	H	K M G_3	NC	NC	G_2	A	—	G_1	—	**CL6**
4500	4·0	—	Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**CL33**
—	—	—	Condenser Input to Filter 32 μF maximum. Plate Supply Impedance = 125 Ω minimum.	26	NC	H	H	K	NC	NC	NC	A	—	—	—	**CY1**
—	—	—	★ *For data and notes refer type* CY32.	26	K'	H	H	K''	A'	NC	NC	A''	—	—	—	**CY2**
—	—	—	Condenser Input to Filter 32 μF maximum. Plate Supply Impedance = 125 Ω minimum.	30	NC	H	NC	—	A	—	H	K	—	—	—	**CY31**
—	—	—	Condenser Input to Filter 32 μF maximum. Plate Supply Impedance per Plate = 125 Ω minimum.	30	NC	H	A''	K''	A'	—	H	K'	—	—	—	**CY32**
—	—	—	Designed especially for measuring instruments.	2	F	D	F	—	—	—	—	—	—	—	—	**DA50**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
DA90	R.F. DIODE	Rectifier	H	1·4	0·15	★	★	—	—	—	—	—	—
DAC21	DIODE TRIODE	Detector A.F. Amplifier	F	1·4	0·025	★	★	★	—	—	★	★	★
DAC31	DIODE TRIODE	Detector A.F. Amplifier	F	1·4	0·025	120 90	0·75 0·45	0 0	— —	— —	400 300	40 40	0·1 0·13
DAC32	DIODE HIGH μ TRIODE	Detector A.F. Amplifier	F	1·4	0·05	★	★	★	—	—	★	★	★
DAF40	DIODE SHARP CUT-OFF R.F. PENTODE	Detector, R.F. Amplifier	F	1·4	0·02	120	0·85	0	See Note	0·2	700	—	2·6
DAF41	DIODE SHARP CUT-OFF PENTODE	Detector, A.F. Amplifier	F	1·4	0·025	Supply 180 Max.	—	−0·2 Max.	Supply 180 Max.	—	—	—	—
DAF70	DIODE PENTODE	Detector, A.F. Amplifier	F	1·25	0·025	67·5	0·8	0	67·5	0·3	450	—	0·2
DAF91	DIODE SHARP CUT-OFF PENTODE	Detector, A.F. Amplifier	F	1·4	0·05	★	★	★	★	★	★	—	★
DAF96	DIODE R.F. PENTODE	Detector, R.F. Amplifier	F	1·4	0·025	★	★	★	★	★	★	—	★
DBC31	DUO-DIODE TRIODE	Detector, A.F. Amplifier	F	1·4	0·05	120 90	1·6 1·4	−1·5 −0·5	— —	— —	900 850	25 25	0·028 0·03
DC90	AMPLIFIER TRIODE	U.H.F. Amplifier	F	1·25	0·2	★	★	★	—	—	★	★	—
DCC90	H.F. TWIN TRIODE	Class "C" R.F. Power Amplifier	F	2·8 1·4	0·11 0·22	★	★	★	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	★ *For data and notes refer type* 1A3.	21	H	D	K	NC	IC	D	H	—	—	—	—	**DA90**
—	—	1·6	★ *For data and notes refer type* DAC31.	30	F− S	M	A	NC	NC	D	NC	F+	—	G_1	—	**DAC21**
— —	— —	1·6	As R.C. Amplifier (120 V. supply). Plate Resistor 0·5 meg. Grid volts = 0. Gain = 25.	30	M	F+	A	NC	D	NC	F−	NC	—	G_1	—	**DAC31**
—	—	1·0	★ *For data and notes refer type* 1H5GT.	30	M	F+	A	NC	D	—	F−	NC	—	G_1	—	**DAC32**
—	—	0·0065	Series Screen Resistor 270,000 Ω (120 V. supply). Mutual Conductance = 7 μmhos at − 6·8 volts Grid Bias.	28	F+ G_2 S	A	D	IC	G_2	G_1	IC	F− S'	—	—	—	**DAF40**
—	—	0·0065	As R.C. Amplifier (150 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Screen Resistor 2·2 meg. Grid Bias 0 volts. Gain = 112.	28	F+ G_2 S	A	D	IC	G_2	G_1	IC	F− S'	—	—	—	**DAF41**
—	—	0·15	As R.C. Amplifier (67·5 V. Supply). Following Grid Leak 3·3 meg. Plate Resistor 1·0 meg. Screen Resistor 4·7 meg.	31	A	NC	G_1	F− G_2	F+	D	NC	G_2	—	—	—	**DAF70**
—	—	—	★ *For data and notes refer type* 1S5.	21	F− G_2	NC	D	G_2	A	G_1	F+	—	—	—	—	**DAF91**
—	—	—	★ *For data and notes refer type* 1AH5.	21	F− G_2	NC	D	G_2	A	G_1	F+	—	—	—	—	**DAF96**
— —	— —	2·6	As R.C. Amplifier (120 V. supply). Plate Resistor 0·5 meg. Plate Current 0·14 mA. Grid Bias − 1 volt. Gain = 19·5.	30	M	F+	A	D_2	D_1	NC	F−	NC	—	G_1	—	**DBC31**
—	★	1·5	★ *For data and notes refer type* 1E3.	32	G_1	NC	F	F+	F−	NC	NC	A	NC	—	—	**DC80**
—	★	3·2	★ *For data and notes refer type* 3A5.	21	F−	A^{II}	$G_1{}^{II}$	F_t	$G_1{}^{I}$	A^{I}	F+	—	—	—	—	**DCC90**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
DCH31	**TRIODE**	Frequency Converter	F	1·4	0·15	120	1·0	0	60	1·5	450 Conv.	—	1·0
	HEXODE					90	1·0	0	60	1·5	450	—	0·5
DF21	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·025	120	1·0	−0·5	See Note	0·21	660	—	3·0
DF22	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	120	1·4	−1·5	See Note	0·3	1100	—	2·5
DF31	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	F	1·4	0·025	120	1·2	0	See Note	0·25	650	—	1·5
DF32	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	120	1·4	−1·5	See Note	0·3	1100	—	1·0
DF33	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	★	★	★	★	★	★	—	★
DF65	**SHARP CUT-OFF PENTODE**	A.F. Amplifier	F	0·625	0·0133	★	★	★	★	★	★	—	★
DF66	**SHARP CUT-OFF PENTODE**	A.F. Amplifier	F	0·625	0·015	22·5	0·05	−1·05	22·5	0·015	100	—	2·0
DF67	**SHARP CUT-OFF PENTODE**	A.F. Amplifier	F	0·625	0·0133	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	— —	—	Conversion Conductance = 4·5 μmhos at — 8 volts Grid Bias. Osc. Plate 60 V. at 2·0 mA. Osc. Grid Leak 35,000 Ω. Osc. Grid Current 0·22 mA. Osc. G_m = 1300 μmhos.	30	M	F—	A^h	$G_3{}^h$ $G_4{}^h$	$G_1{}^t$	A^t	F+	NC	—	$G_1{}^h$	—	**DCH31**
—	—	0·006	Series Screen Resistor 0·12 meg. (120 V. supply). Mutual Conductance = 6·6 μmhos at — 4·6 volts Grid Bias.	30	F—	M	A	G_2	NC	G_3	NC	F+	—	G_1	—	**DF21**
—	—	0·005	Series Screen Resistor 0·1 meg (120 V. supply). Mutual Conductance = 11 μmhos at — 8 volts Grid Bias.	30	F—	M	A	G_2	NC	G_3	NC	F+	—	G_1	—	**DF22**
—	—	0·005	Series Screen Resistor 0·12 meg. (120 V. supply). Mutual Conductance = 6·5 μmhos at — 4·5 volts Grid Bias. As R.C. Amplifier (120 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 1·0 meg. Screen Resistor 5·0 meg. Grid Bias — 0·5 volt. Gain = 81.	30	M	F+	A	G_2	G_3	NC	F—	NC	—	G_1	—	**DF31**
—	—	0·005	Series Screen Resistor 0·1 meg. (120 V. supply). Mutual Conductance = 11 μmhos at — 9 volts Grid Bias.	30	M	F+	A	G_2	G_3	NC	F— G_3	NC	—	G_1	—	**DF32**
—	—	0·007	★ *For data and notes refer type* 1N5GT.	30	M	F+	A	G_2	NC	—	F— G_3	NC	—	G_1	—	**DF33**
—	—	0·2	★ *For data and notes refer type* 6008.	45	F+ G_2	A	G_2	G_1	F—	—	—	—	—	—	—	**DF65**
—	—	0·15	Primarily intended for hearing aids. Plate Current Cut-off at — 2·5 volts Grid Bias. As R.C. Amplifier (22·5 V. supply). Plate Resistor 1·0 meg. Screen Resistor 2·0 meg. Grid Bias — 0·625 volts. Cathode Current 16 μA. Gain = 33.	50	A	G_2	F+	G_1	F— G_3	—	—	—	—	—	—	**DF66**
	—	0·2	★ *For data and notes refer type* 6008.	46	F+ G_2	A	G_2	G_1	F—	—	—	—	—	—	—	**DF67**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
DF70	**SHARP CUT-OFF PENTODE**	A.F. Amplifier	F	0·625	0·025	30	0·05	−1·85	30	0·018	100	—	2·5
DF72	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·25	0·025	67·5	1·7	0	67·5	0·75	1000	—	0·65
DF73	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·25	0·025	67·5	1·7	0	67·5	0·5	800	—	0·45
DF91	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	★	★	★	★	★	★	—	★
DF92	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	F	1·4	0·05	★	★	★	★	★	★	—	★
DF96	**R.F. PENTODE**	R.F. Amplifier	F	1·4	0·025	67·5 90	1·0 1·65	0 0	67·5 90	0·3 0·5	750 850	— —	1·5 1·4
DH76	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	13·0	0·16	250	—	−3	—	—	1200	70	0·058
DK21	**OCTODE**	Frequency Converter	F	1·4	0·05	120	1·5	(G_4) 0	(G_2) See Note	0·25	500	—	1·5
DK31	**OCTODE**	Frequency Converter	F	1·4	0·05	90	1·0	(G_4) 0	(G_2) 90	0·2	Conv. 400	—	1·0
DK32	**PENTAGRID**	Frequency Converter	F	1·4	0·05	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·5	Primarily intended for hearing aids. Plate Current Cut-off at — 2·75 V. Grid Bias. As R.C. Amplifier (45 V. supply). Following Grid Leak 10·0 meg. Screen Resistor 3·5 meg. Plate Resistor 1·0 meg. Grid Leak 3·0 meg. Gain = 38.	31	IC	G_1	IC	F— G_3	F+	IC	A	G_2	—	—	—	**DF70**
—	—	0·014	Plate Current = 20 µA at — 5 volts Grid Bias.	31	NC	G_1	NC	F— G_3 S	F+	NC	A	G_2	—	—	—	**DF72**
—	—	0·014	Mutual Conductance = 8 µmhos at — 14-volts Grid Bias.	31	NC	G_1	NC	F— G_3 S	F+	NC	A	G_2	—	—	—	**DF73**
—	—	0·01	★ *For data and notes refer type* 1T4.	21	F— G_3	A	G_2	NC	F— G_3	G_1	F+	—	—	—	—	**DF91**
—	—	0·008	★ *For data and notes refer type* 1L4.	21	F— G_3	A	G_2	NC	F— G_3	G_1	F+	—	—	—	—	**DF92**
— —	— —	0·008		21	F— G_3 S	A	G_2	NC	F— G_3 S	G_1	F+	—	—	—	—	**DF96**
—	—	1·8	As R.C. Amplifier (250 V. supply). Plate Resistor 0·2 meg. Cathode Resistor 3000 Ω.	30	S	H	A	D_1	D_2	—	H	K	—	G_1	—	**DH76**
—	—	0·1	Series Screen Resistor 0·12 meg. (120 V. supply). Conversion Conductance = 5 µmhos at — 8 V. Grid (G_4) Bias. Grid No. 2 Current 2·4 mA through 25,000 Ω. Osc. Grid (G_{1+3}) Resistor 35,000 Ω. Osc. Grid Current 0·2 mA. Osc. G_m = 950 µmhos.	30	F+ G_5	M	A	G_3	G_1 G_2	NC	G_2	F—	—	G_4	—	**DK21**
—	—	0·1	Conversion Conductance = 4 µmhos at — 8 volts Grid (G_4) Bias. Osc. Grid (G_{1+3}) Current 0·2 mA. Osc. Grid Resistor 35,000 Ω. Osc. G_m = 800 µmhos.	30	M	F+	A	G_3	G_1 G_2	G_2	F—	NC	—	G_4	—	**DK31**
★	★	—	★ *For data and notes refer type* 1A7GT.	30	M	F+	A	G_3 G_5	G_1	G_2	F—	NC	—	G_4	—	**DK32**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
DK40	**OCTODE**	Frequency Converter	F	1·4	0·05	135	1·0	(G_4) 0	(G_3) See Note	0·25	425	—	1·0
DK91	**PENTAGRID**	Frequency Converter	F	1·4	0·05	★	★	★	★	★	★	—	★
DK92	**HEPTODE**	Frequency Converter	F	1·4 for Par'l filaments	0·05	★	★	★	★	★	★	—	★
				1·35 for Series filament		★	★	★	★	★	★	—	★
DK96	**HEPTODE**	Frequency Converter	F	1·4	0·025	★	★	★	★	★	★	—	★
DL21	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·05	★	★	★	★	★	★	—	★
DL31	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·05	120	5·0	−4·8	120	0·9	1400	—	0·35
						90	4·0	−3·0	90	0·7	1300	—	0·3
DL33	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·1	★	★	★	★	★	★	—	★
				2·8	0·05								
DL35	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·1	★	★	★	★	★	★	—	★
DL36	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	F	1·4	0·1	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	
—	—	0·125	Series Screen Resistor 0·27 meg. (135 V. supply). Conversion Conductance = 4·2 μmhos at − 18·5 V. Grid (G_4) Bias. Grid No. 2 Current 2·6 mA through 26,000 Ω. Osc. Grid (G_{1+2}) Resistor 35,000 Ω. Osc. Grid voltage = 8 volts R.M.S.	28	F+ G_5	A	G_2	G_1 G_3	G_5	G_4	NC	F	—	—	—	**DK40**
		0·4	★ *For data and notes refer type* 1R5.	21	F− G_5	A	G_2 G_4	G_1	F− G_5	G_3	F+	—	—	—	—	**DK91**
—	—	0·11	☆ *For data and notes refer type* 1AC6.	21	F−	A	G_2	G_1	G_4	G_3	F+ G_5	—	—			**DK92**
—	—	—	★ *For data and notes refer type* 1AB6.	21	F−	A	G_2	G_1	G_4	G_3	F+ G_5	—	—	—	—	**DK96**
★	★	0·5	★ *For data and notes refer type* DL31.	30	F− G_2	NC	A	G_2	G_1	NC	NC	F+	—	—	—	**DL21**
24,000 22,500	0·27 0·16	0·5	Total Harmonic Distortion 10% in each case.	30	NC	F+	A	G_2	G_1	NC	F−	NC	—	—	—	**DL31.**
★	★	—	★ *For data and notes refer type* 3Q5G.	30	NC	F+	A	G_2	G_1	—	F−	F† G_2	—	—		**DL33**
★	★	—	★ *For data and notes refer type* 1C5G.	30	NC	F+	A	G_2	G_1	—	F− G_2	NC	—	—	—	**DL35**
★	★	—	★ *For data and notes refer type* 1Q5G.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**DL36**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
DL41	POWER OUTPUT PENTODE	Class "A" Power Amplifier		1·4	0·05	120	5·0	−5·8	120	0·82	1350	—	0·165
			F	1·4	0·1	120	10·0	−5·6	120	1·65	2550	—	0·08
				2·8	0·05	120	9·0	−5·45	120	1·45	2450	—	0·095
DL65	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	1·25	0·013	★	★	★	★	★	★	—	★
						★	★	★	★	★	★	—	—
DL66	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	1·25	0·015	22·5	0·3	−1·4	22·5	0·075	350	—	0·3
						45	0·9	−3·0	45	0·2	—	—	—
DL67	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	1·25	0·013	★	★	★	★	★	—	—	—
DL68	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	1·25	0·025	22·5 Supply	0·6	−2	22·5	0·15	430	—	—
DL70	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	1·25	0·1	150	7·0	−8·5	90	1·2	1000	—	—
DL71	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	1·25	0·025	45	0·6	−1·25	45	0·15	500	—	0·35
DL72	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	1·25	0·025	45	1·25	−4·5	45	0·4	500	—	0·225
DL75	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	1·25	0·025	90	1·3	−3	90	0·3	670	—	0·5

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
24,000	0·27	0·5	Total Harmonic Distortion 10%. Filament voltage applied between pins 1 and 8. Grid voltage referred to pin 8.	28	F_1	A	IC	NC	G_2	G_1	F+	F− G_2	—	—	—	DL41
12,000	0·55		Total Harmonic Distortion 10%. Filament voltage applied between pins 1 and 7, 8 tied together. Grid voltage referred to pins 7 and 8.													
13,500	0·49		Total Harmonic Distortion 10%. Filament voltage applied between pins 7 and 8. Grid voltage referred to pin 8.													
★	★	0·2	★ *For data and notes refer type* 6007.	45	F+ G_3	A	G_2	G_1	F−	—	—	—	—	—	—	DL65
★	★															
—	0·0027	0·2	Primarily intended for hearing aids. Total Harmonic Distortion 10%.	50	A	G_2	F+	G_1	F− G_3	—	—	—	—	—	—	DL66
—	0·0165															
★	★	0·2	★ *For data and notes refer type* 6007.	46	F+ G_3	A	G_2	G_1	F−	—	—	—	—	—	—	DL67
37,500	0·005	0·15	Primarily intended for hearing aids. Total Harmonic Distortion 10%.	50	A	G_2	F+	G_1	F− G_3	—	—	—	—	—	—	DL68
—	0·63	—														DL70
*	0·006	—	Primarily intended for hearing aids. * High Impedance Choke shunted by 0·1 meg Resistor. Grid Leak 10·0 meg. Total Harmonic Distortion 10%.	31	IC	G_1	IC	F− G_3	F+	IC	A	G_2	—	—	—	DL71
*	0·023	—	Primarily intended for hearing aids. * High Impedance Choke shunted by 0·1 meg Resistor. Grid Leak 10·0 meg. Total Harmonic Distortion 10%.	31	IC	G_1	IC	F− G_3	F+	IC	A	G_2	—	—	—	DL72
60,000	0·047	0·5	Primarily intended for hearing aids. Total Harmonic Distortion 10%.	31	NC	G_1	NC	F− G_3	F+	NC	A	G_2	—	—	—	DL75

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
DL91	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·1	★	★	★	★	★	★	—	★
DL92	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4 2·8	0·1 0·05	★	★	★	★	★	★	—	★
DL93	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4 2·8	0·2 0·1	★	★	★	★	★	★	—	★
DL94	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4 2·8	0·1 0·05	★	★	★	★	★	★	—	★
DL95	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4 2·8	0·1 0·05	★	★	★	★	★	★	—	★
DL96	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4 2·8	0·05 0·025	★	★	★	★	★	★	—	—
DLL21	**TWIN POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·1	120	Zero Signal 2 x 1·0 Max. Signal 2 x 4·15	−8·7	120	Zero Signal 0·32 Max. Signal 2·2	—	—	—
				1·4	0·2	135	Zero Signal 2 x 2·0 Max. Signal 2 x 8·8	−9·4	135	Zero Signal 0·7 Max. Signal 4·6	—	—	—
				2·8	0·1	135	Zero Signal 2 x 1·5 Max. Signal 2 x 8·2	−9·5	135	Zero Signal 0·5 Max. Signal 4·8	—	—	—
DLL31	**TWIN POWER OUTPUT PENTODE**	Power Amplifier	F	1·4	0·1	120	Zero Signal 2 x 1·0 Max. Signal 2 x 4·15	−7·5	120	Zero Signal 0·32 Max. Signal 2·2	—	—	—
				1·4	0·2	135	Zero Signal 2 x 2·0 Max. Signal 2 x 8·0	−9·0	135	Zero Signal 0·64 Max. Signal 4·6	—	—	—
DM70	**TUNING INDICATOR**	Tuning Indicator	F	1·4	0·025	★	★	★	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
★	★	—	★ *For data and notes refer type* 1S4.	21	F−	A	G_1	G_2	F−	A	F	—	—	—	—	**DL91**
★	★	0·4	★ *For data and notes refer type* 3S4.	21	F−	A	G_1	G_2	F_t G_3	A	F+	—	—	—	—	**DL92**
★	★	0·34	★ *For data and notes refer type* 3A4.	21	F−	A	G_2	G_1	F_t G_3	A	F+	—	—	—	—	**DL93**
★	★	0·2	★ *For data and notes refer type* 3V4.	21	F−	A	G_2	NC	F_t G_3	G_1	F+	—	—	—	—	**DL94**
★	★	0·2	★ *For data and notes refer type* 3V4.	21	F−	A	G_1	G_2	F_t G_3	A	F+	—	—	—	—	**DL95**
★	★	—	★ *For data and notes refer type* 3C4.	21	F−	A	G_2	NC	F_t G_3	G_1	F+	—	—	—	—	**DL96**
30,000 Plate to Plate	0·6	0·6	Total Harmonic Distortion 3%. Filament voltage applied to pins 1 and 8.	30	F_t G_3' G_3''	G_1'	A'	G_2' G_2''	G_1''	A''	F	F	—	—	—	**DLL21**
15,000 Plate to Plate	1·5		Total Harmonic Distortion 3·8%. Filament voltage applied to pins 1 and 7, 8 tied together.													
15,000 Plate to Plate	1·5		Total Harmonic Distortion 3·6%. Filament voltage applied to pins 7 and 8.													
30,000 Plate to Plate	0·6	—	Total Harmonic Distortion 5·7%.	30	F+	F+	A'	G_1'	G_1''	A''	F−	G_2	—	—	—	**DLL31**
15,000 Plate to Plate	1·5		Total Harmonic Distortion 3%.													
	—	—	★ *For data and notes refer type* 1F3.	31	NC	NC	A	F	F	G	NC	NC	—	—	—	**DM70**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance μmhos	Amplification factor	Plate resistance Meg-ohms
			TYPE	Voltage Volts	Current Amps								
DY30	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	1·25	0·2	★	★	—	—	—	—	—	—
DY51	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	F	1·4	—	Peak Inverse 17,000 Max.	Average 0·5 Peak* 20 Max.	—	—	—	—	—	—
DY70	**HALF-WAVE VACUUM RECTIFIER**	High Voltage Rectifier	F	1·25	0·14	Peak Inverse 10,000	2·0 Max.	—	—	—	—	—	—
E1C	**AMPLIFIER TRIODE**	R.F. and A.F. Amplifier	H	6·3	0·15	180 135 90	4·5 3·5 2·5	−5 −3·75 −2·5	—	—	2000 1900 1700	25 25 25	0·0125 0·0132 0·0147
E1F	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·15	250	2·0	−3	100	0·7	1400	—	1·5
E2F	**REMOTE CUT-OFF R.F. PENTODE**	U.H.F. Amplifier	H	6·3	0·15	250	6·7	−3	100	2·7	1700	—	0·6
E80CC	**TWIN TRIODE**	A.F. and Class "A" Power Amplifier	H	12·6 6·3	0·3 0·6	★	★	★	—	—	★	★	★
E80F	**SHARP CUT-OFF PENTODE**	Low Noise A.F. Pre-Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
E83F / 18043	**SHARP CUT-OFF PENTODE**	Wide-band Telephone Repeater	H	6·3	0·3	210	10·0	See Note	120	2·1	9000	—	0·5
E80L	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·75	200	30·0	−4·5	200	4·2	9000	—	—
E81L	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·48	210	20·0	−3	210	5·3	11,000	—	—
E9000	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·4	★	★	★	—	—	★	★	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S	TYPE No.
—	—	—	★ *For data and notes refer type* 1B3GT.	30	IC	F	IC	—	IC	—	F IS	IC	—	A	—	**DY30**
	—	—	* Pulse duration ½% of one cycle with maximum of 5 μsecs.	3	F	F	A	—	—	—	—	—	—	—	—	**DY51**
—	—	—														**DY70**
— — —	— — —	1·5	As R.C. Amplifier (180 V. supply). Plate Resistor 0·3 meg. Cathode Resistor 6000 Ω. Gain = 19.	13	H	A	G_1	H	K	—	—	-	—	—	—	**E1C**
—	—	0·007	As R.C. Amplifier (250 V. supply). Following Grid Leak 0·7 meg. Plate Resistor 0·3 meg. Screen Resistor 1·0 meg. Cathode Resistor 4000 Ω. Gain = 184.	22	H	G_2	G_3	H	K	G_1	A	—	—	—	—	**E1F**
—	—	0·007	Mutual Conductance = 2 μmhos at — 40 volts Grid Bias.	22	F	G_2	G_3	F	K	G_1	A	—	—	—	—	**E2F**
★	★	$2·6_{t1}$ $2·75_{t2}$	★ *For data and notes refer type* 6085.	32	A^I	$G_1{}^I$	K^I	H	H	A^{II}	$G_1{}^{II}$	K^{II}	H_1	—	—	**E80CC**
— —	—	0·02	★ *For data and notes refer type* 6084.	32	G_2	S	K	H	H	A	S	G_3	G_1	—	—	**E80F**
—	—	0·015	Cathode Bias Resistor 165 Ω. Plate Current Cut-off at — 5 V. Grid (G_1) Bias. Equivalent Noise Resistance 750 Ω. Long life valve.	32	G_2	G_1	K	H	H	A	IC	IC	G_3	—	—	**E83F / 18043**
7000	2·5	0·1	Ruggedised, long-life tube. Total Harmonic Distortion 10%.	32	S	G_1	K	H	H	S	A	G_2	G_3	—	—	**E80L**
15,000	2·1	0·02	Long-life tube.	32	S	G_1	K	H	H	S	A	G_2	G_3	—	—	**E81L**
		$3·8_{t1}$ $3·7_{t2}$	★ *For data and notes refer type* 5920.	21	A^I	A^{II}	H	H	$G_1{}^{II}$	$G_1{}^I$	K	—	—	—	—	**E90CC**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
E406N	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	4·0	1·0	500	24·0	−68	—	—	3000	6	2000 Ohms
E408N	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	4·0	1·0	400	30·0	−36	—	—	2700	8	3000 Ohms
E415	**AMPLIFIER TRIODE**	A.F. Amplifier	H	4·0	1·0	200	6·0	−8	—	—	1400	15	0·011
E424	**AMPLIFIER TRIODE**	A.F. Amplifier	H	4·0	1·0	200	6·0	−6	—	—	1800	24	0·013
E424N	**AMPLIFIER TRIODE**	A.F. Amplifier	H	4·0	1·0	200	6·0	−3·5	—	—	2400	30	0·0125
E442	**R.F. TETRODE**	R.F. Amplifier	H	4·0	1·0	200	1·5	−1·3	100	0·6	900	—	0·8
E442S	**R.F. TETRODE**	R.F. Amplifier	H	4·0	1·0	200	4·0	−2	60	0·5	1000	—	0·4
E443H	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	4·0	1·1	250	36·0	−15	250	6·8	3000	—	0·043
E443N	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	4·0	1·1	400	30·0	−40	200	5·2	1800	—	0·055
E444N	**DIODE TETRODE**	Detector R.F. Amplifier	H	4·0	1·1	200	4·0	−3	90	0·5	Max. 3000	—	0·2
E446	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	4·0	1·1	200	3·0	−2	100	1·2	2300	—	2·2

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
11,500	5·3	2·9	Total Harmonic Distortion 5%.	10	A	F	G_1	F	—	—	—	—	—	—	—	**E406N**
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
6000	2·6	12·0	Total Harmonic Distortion 5%	10	A	F	G_1	F	—	—	—	—	—	—	—	**E408N**
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
—	—	3·5		14	A	H	G_1	H	K	—	—	—	—	—	—	**E415**
				14	A	H	G_1	H	K M	—	—	—	—	—	—	
				15	H	A	G_2	K	H	—	—	—	—	—	—	
—	—	3·5		14	A	H	G_1	H	K	—	—	—	—	—	—	**E424**
				14	A	H	G_1	H	K M	—	—	—	—	—	—	
				15	H	A	G_2	K	H	—	—	—	—	—	—	
—	—	2·0		14	A	H	G_1	H	K	—	—	—	—	—	—	**E424N**
				14	A	H	G_1	H	K M	—	—	—	—	—	—	
				15	H	A	G_1	K	H	—	—	—	—	—	—	
—	—	0·005		14	G_2	H	G_1	H	K M	—	—	—	—	A	—	**E442**
—	—	0·02		14	G_2	H	G_1	H	K M	—	—	—	—	A	—	**E442S**
7000	3·1	1·1	Total Harmonic Distortion 10%.	14	A	F	G_1	F	G_2	—	—	—	—	—	—	**E443H**
				15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	
13,500	5·4	0·9	Total Harmonic Distortion 10%.	14	A	F	G_1	F	G_2	—	—	—	—	—	—	**E443N**
				15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	
—	—	0·003	G_m measurement at zero bias.	18	D	K M	H	H	G_2	G_1	—	—	—	A	—	**E444N**
				17	H	G_2	D	G_1	K M	H	—	—	—	A	—	
	—	0·006	Plate Current Cut-off at − 5 volts Grid Bias.	14	G_2	H	G_1	H	K M G_2	—	—	—	—	A	—	**E446**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
E447	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	4·0	1·1	200	4·5	−2	100	1·9	2300	—	1·0
E452T	**R.F. TETRODE**	R.F. Amplifier	H	4·0	1·0	200	3·0	−2	100	0·7	2000	—	0·45
E454	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	4·0	1·2	200	3·5	−3·5	—	—	1600	30	0·019
E463	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	4·0	1·35	250	36·0	−22	250	3·2	2700	—	0·037
EA40	**DIODE**	Detector, Rectifier	H	6·3	0·2	Peak Inverse 6500	Max. 25·0	—	—	—	—	—	—
EA50	**DIODE**	Diode Detector for Television Receivers	H	6·3	0·15	200 Max.	D.C. Output 5·0 Max.	—	—	—	—	—	—
EA76	**DIODE**	Detector, Rectifier	H	6·3	0·15	150 Max.	D.C. Output 9·0 Max.	—	—	—	—	—	—
EAB1	**TRIPLE DIODE**	Detector, Rectifier	H	6·3	0·2	Max. Peak 200 per Plate	D.C. Output 0·8 Max. per Plate	—	—	—	—	—	—
EABC80	**TRIPLE DIODE HIGH μ TRIODE**	Detector, A.F. Amplifier	H	6·3	0·55	★	★	★	—	—	★	★	★
EAC91	**DIODE TRIODE**	U.H.F. Converter	H	6·3	0·3	200	7·5	−2·8	—	—	2800	36	0·0128
EAF41	**DIODE REMOTE CUT-OFF PENTODE**	Detector, R.F. and A.F. Amplifier	H	6·3	0·2	250	5·0	−2	See Note	1·6	1800	—	1·2

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·006	Mutual Conductance = 2 μmhos at — 50 volts Grid	14	G_2	H	G_1	H	K M G_3	—	—	—	—	A	—	E447
				20	H	K	G_2	M	G_1	NC	H	—	—	A	—	
—	—	0·003		14	G_2	H	G_1	H	K M	—	—	—	—	A	—	E452T
—	—	—		20	H	K	A	D_2	M	D_1	H	—	—	G_1	—	E454
8000	4·1	1·0	Total Harmonic Distortion 10%.	18	A	K G_2	H	H	G_2	G_1	—	—	—	—	—	E463
				20	H	K	A	NC	G_1	G_2	H	—	—	—	—	
—	—	—	Peak Plate Current = 100 mA max.	28	H	—	—	D	—	—	K	H	—	—	—	EA40
—	—	—	Cathode to Plate capacity 2·1 μμF.	1	H	K	H	D	—	—	—	—	—	—	—	EA50
—	—	—	Peak Inverse voltage = 420 V. maximum. Peak Plate Current = 54 mA maximum.	47	H	A	K	H	A	—	—	—	—	—	—	EA76
—	—	—	For replacement consider type EBC3 using Grid No. 1 as the third diode with the triode plate connected as a grounded shield.	26	M	H	H	K	D_2	NC	D_3	D_1	—	—	—	EAB1
—	—	2·2	★ *For data and notes refer type* 6AK8.	32	A	G_1	S K_t K_{d1} K_{d2}	H	H	K_{d2}	D_3	D_1	D_2	—	—	EABC80
—	—	1·6	Frequency limit as Frequency Changer, 300 Mc/s. As Oscillator, 600 Mc/s.	21	D	K^d	H	H	K^t	G_1	A^t	—	—	—	—	EAC91
—	—	0·002	Mutual Conductance = 18 μmhos at — 40 volts Grid (G_1) Bias. Series Screen Resistor 95,000 Ω (250 V. supply). As R.C. Amplifier (250 V. supply). Following Grid Leak 0·7 meg. Plate Resistor 0·2 meg. Screen Resistor 0·8 meg. Cathode Resistor 1600 Ω. Gain = 105.	28	H	A	D	1C	G_2	G_1	K G_3 S	H	—	—	—	EAF41

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
EAF42	**DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector, R.F. Amplifier	H	6·3	0·2	250	5·0	−2	85 See Note	1·5	2000	—	1·4
EB4	**TWIN DIODE**	Detector, Rectifier	H	6·3	0·2	★	★	—	—	—	—	—	—
EB11	**TWIN DIODE**	Detector, Rectifier	H	6·3	0·2	★	★	—	—	—	—	—	—
EB34	**TWIN DIODE**	Detector, Rectifier	H	6·3	0·2	200 Max. per Plate	D.C. Output 0·8 Max. per Plate	—	—	—	—	—	—
EB41	**TWIN DIODE**	Detector, Rectifier	H	6·3	0·3	150 Max. per Plate	D.C. Output 9·0 Max. per Plate	—	—	—	—	—	—
EB91	**TWIN DIODE**	Detector, Rectifier	H	6·3	0·3	★	★	—	—	—	—	—	—
EBC3	**DUO-DIODE TRIODE**	Detector, A.F. Amplifier	H	6·3	0·2	★	★	★	—	—	★	★	★
EBC11	**DUO-DIODE TRIODE**	Detector, A.F. Amplifier	H	6·3	0·2	250	5·0	−8	—	—	2200	25	0·0115
EBC33	**DUO-DIODE TRIODE**	Detector, A.F. Amplifier	H	6·3	0·2	250	5·0	−5·5	—	—	2000	30	0·015
EBC41	**DUO-DIODE HIGH µ TRIODE**	Detector, A.F. Amplifier	H	6·3	0·23	★	★	★	—	—	★	★	★
EBC80	**DUO-DIODE HIGH µ TRIODE**	Detector, A.F. Amplifier	H	6·3	0·23	★	★	★	—	—	★	★	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·002	Mutual Conductance = 20 μmhos at — 43 volts Grid (G_1) Bias. Series Screen Resistor 0·11 meg. (250 V. supply). As R.C. Amplifier (250 V. supply). Following Grid Leak 0·7 meg. Plate Resistor 0·22 meg. Screen Resistor 0·82 meg. Cathode Resistor 1500 Ω. Gain = 120.	28	H	A	D	G_2	G_2	G_1	K S	H	—	—	—	**EAF42**
—	—	—	★ *For data and notes refer type* EB34.	26	M	H	H	K'	D_1	S	D_2	K''	—	—	—	**EB4**
—	—	—	★ *For data and notes refer type* EB34.	27	D_2	K''	K' M	NC	H	H	NC	D_1	—	—	—	**EB11**
—	—	—		30	S M	H	D_1	K'	D_2	—	H	K''	—	—	—	**EB34**
—	—	—	Peak Plate Current per Plate = 54 mA maximum.	28	H	NC	K''	D_2	S	D_1	K'	H	—	—	—	**EB41**
—	—	—	★ *For data and notes refer type* 6AL5.	21	K'	A''	H	H	K''	IS	A'	—	—	—	—	**EB91**
—	—	1·3	★ *For data and notes refer type* EBC33.	26	M	H	H	K	D_2	D_1	NC	A	—	G_1	—	**EBC3**
—	—	—	As R.C. Amplifier (250 V. supply). Plate Resistor 0·2 meg. Cathode Resistor 5000 Ω. Gain = 18.	27	A	G_1	K M	NC	H	H	D_1	D_2	—	—	—	**EBC11**
—	—	1·4	As R.C. Amplifier (300 V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Cathode Resistor 3900 Ω. Gain = 23·5.	30	M	H	A	D_1	D_2	—	H	K	—	G_1	—	**EBC33**
—	—	1·3	★ *For data and notes refer type* 6BD7.	28	H	A	G_1	S	D_2	D_1	K	H	—	—	—	**EBC41**
—	—	1·3	★ *For data and notes refer type* 6BD7.	32	A	G_1	K	H	H	D_1	IS	D_2	IC	—	—	**EBC80**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
EBF2 **EBF2G**	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector, R.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EBF11	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·2	250	5·0	−2	100 See Note	1·8	1800	—	2·0
EBF32 **EBF35**	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector, R.F. Amplifier	H	6·3	0·2	250	5·0	−2	100 See Note	1·6	1800	—	1·3
EBF80	**DUO-DIODE REMOTE CUT-OFF PENTODE**	Detector, R.F. and A.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EBF81	**DUO-DIODE MEDIUM CUT-OFF R.F. PENTODE**	Detector, R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EBL1	**DUO-DIODE POWER OUTPUT PENTODE**	Detector, Class "A" Power Amplifier	H	6·3	1·18	250	36	−6	250	4·0	9000	—	0·05
EBL21	**DUO-DIODE POWER OUTPUT PENTODE**	Detector. Class "A" Power Amplifier	H	6·3	0·8	250 250	44 36	−6·2 −6·0	275 250	5·8 4·5	9500 9000	— —	0·05 0·05
EC31	**POWER OUTPUT TRIODE**	A.F. and Class "A" Power Amplifier	H	6·3	0·65	250	20	−16	—	—	3200	10·5	3300 Ohms
EC50	**GAS-FILLED TRIODE**	Relaxation Oscillator	H	6·3	1·3	Peak 1000 Max.	Peak 750 Max. Average 10 Max.	—	—	—	—	—	—
EC52	**OSCILLATOR TRIODE**	U.H.F. Amplifier	H	6·3	0·43	250	10	−2·6	—	—	6500	60	9200 Ohms
EC53	**OSCILLATOR TRIODE**	U.H.F. Amplifier	H	6·3	0·25	200	7·5	−3·3	—	—	2900	33	0·0114

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·002	★ *For data and notes refer type* EBF32.	26	M	H	H	K G_3	D_2	D_1	G_2	A	—	G_1	—	**EBF2**
				30	H	M	A	G_2	D_1	D_2	K	H	—	G_1	—	**EBF26**
—	—	0·002	Series Screen Resistor 85,000 Ω (250 V. supply). Mutual Conductance = 9 μmhos at — 45 volts Grid Bias.	27	G_2	G_1	K G_3 M	A	H	H	D_1	D_2	—	—	—	**EBF11**
—	—	0·002	Series Screen Resistor 0·1 meg (250 V. supply). Mutual Conductance = 18 μmhos at — 38 volts Grid Bias.	30	M	H	A	D_2	D_1	G_2	H	K G_3		G_1	—	**EBF32**
					H	M	A	G_2	D_1	D_2	K	H	—	G_1	—	**EBF35**
—	—	0·002	★ *For data and notes refer type* 6N8.	32	G_2	G_1	K S	H	H	A	D_1	D_2	G_3	—	—	**EBF80**
—	—	0·002	★ *For data and notes refer type* 6AD8.	32	G_2	G_1	K IS	H	H	A	D_1	D_2	G_3	—	—	**EBF81**
7000	4·5	0·8	Total Harmonic Distortion 10%.	26	NC	H	H	K G_3 M	D_1	D_2	G_2	A	—	G_1	—	**EBL1**
5700 7000	5·5 4·5	1·4	Total Harmonic Distortion 10% in each case.	29	H	A	G_1	G_2	D_2	D_1	K G_3	H	—	—	—	**EBL21**
10,000	0·5	—	Total Harmonic Distortion 5%. As R.C. Amplifier (550 V. supply). Plate Resistor 0·16 meg. Cathode Resistor 9000 Ω. Gain = 7·4.	30	—	H	A	—	G_1	—	H	K	—	—	—	**EC31**
—	—	2·3	Grid Resistor not less than 750 Ω per max instantaneous unit voltage applied to Grid. Max. Frequency 150 Kc/s.	26	NC	H	H	K	NC	G_1	NC	NC	—	A	—	**EC50**
—	—	3·1	Frequency limit as Oscillator 400 Mc/s.	33	H	G_1	K	A	NC	NC	NC	NC	H	—	—	**EC52**
	—	1·3	Frequency limit 600 Mc/s.	16	H	K	H	G_1	A	—	—	—	—	—	—	**EC53**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
EC55	**DISC-SEAL TRIODE**	U.H.F. Amplifier	H	6·3	0·4	★	★	★	—	—	★	★	—
EC56	**LIGHTHOUSE TRIODE**	U.H.F. Amplifier	H	6·3	1·25	250	30	−2	—	—	14,000	50	—
EC70	**OSCILLATOR TRIODE**	U.H.F. Amplifier	H	6·3	0·15	★	★	★	—	—	★	★	★
EC80	**V.H.F. TRIODE**	Grounded Grid Amplifier	H	6·3	0·48	★	★	★	—	—	★	★	—
EC81	**U.H.F. TRIODE**	Oscillator (Up to 1500 Mc/s)	H	6·3	0·2	★	★	—	—	—	—	—	—
EC91	**U.H.F. TRIODE**	Grounded-Grid Amplifier	H	6·3	0·3	250	10	−1·5	—	—	8500	100	0·012
EC031	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·95	250	6·0	−4·6	—	—	2300	32	0·014
EC032	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·95	250	6·0	−4·6	—	—	2300	32	0·014
EC033	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·4	250	9·0	−4	—	—	3600	35	9700 Ohms
EC034	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·95	250	10	−16	—	—	2200	11·5	5200 Ohms
EC035	**HIGH μ TWIN TRIODE**	A.F. Amplifier	H	6·3	0·4	250	2·3	−2·5	—	—	2000	68	0·034

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	1·1	★ *For data and notes refer type* 5861.	43	H	H· K	G_1	A	—	—	—	—	—	—	—	**EC55**
—	—	1·5	Connection No. 9 used for R.F. connection to Cathode. As an Oscillator at 4000 Mc/s. power output = 0·5 watts. As an Amplifier with 50 Mc/s band-width at 4000 Mc/s voltage gain = 9 to 10 dB.	52	1 IC	2 H	3 K	4 —	5 K	6 —	7 H	8 K	9 K	10 G_1	11 A	**EC56**
—	★	—	★ *For data and notes refer type* 6K4.	31	G_1	A	H	A	NC	H	K	A	—	—	—	**EC70**
—	—	3·4	★ *For data and notes refer type* 6Q4.	32	G_1	G_1	K	H	H	NC	G_2	G_1	A	—	—	**EC80**
—	★	1·5	★ *For data and notes refer type* 6R4.	32	G_1	NC	K	H	H	NC	NC	A	NC	—	—	**EC81**
—	—	2·5	Frequency limit 250 Mc/s.	21	G_1	K	H	H	K	G_2	A	—	—	—	—	**EC91**
—	—	$3·4_{t_2}$ $3·75_{t_1}$	Values are for each unit.	30	NC	H	A^1	$G_1{}^1$	$G_1{}^{II}$	A^{II}	H	K	—	—	—	**ECC31**
—	—	4·3	As R.C. Amplifier (400 V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Cathode Resistor 3900 Ω. Gain = 27·5. Values are for each unit.	30	$G_1{}^1$	A^1	K^1	$G_1{}^{II}$	A^{II}	K^{II}	H	H	—	—	—	**ECC32**
—	—	2·5	As R.C. Amplifier (400 V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Cathode Resistor 3900 Ω. Gain = 28. Values are for each unit.	30	$G_1{}^1$	A^1	K^1	$G_1{}^{II}$	A^{II}	K^{II}	H	H	—	—	—	**ECC33**
—	—	4·0	Values are for each unit.	30	$G_1{}^1$	A^1	K^1	$G_1{}^{II}$	A^{II}	K^{II}	H	H	—	—	—	**ECC34**
	—	$2·5_{t_1}$ $3·0_{t_2}$	As R.C. Amplifier (400 V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Cathode Resistor 4700 Ω. Gain = 46. Values are for each unit.	30	$G_1{}^1$	A^1	K^1	$G_1{}^{II}$	A^{II}	K^{II}	H	H	—	—	—	**ECC35**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
ECC40	**TWIN TRIODE**	Class "A" Power Amplifier and A.F. Amplifier	H	6·3	0·6	250	6·0	See Note	—	—	2000	32	0·011
ECC81	**HIGH μ TWIN TRIODE**	R.F. Amplifier	H	12·6 6·3	0·15 0·3	★	★	★	—	—	★	★	—
ECC82	**TWIN TRIODE**	A.F. Amplifier	H	12·6 6·3	0·15 0·3	★	★	★	—	—	★	★	★
ECC83	**HIGH μ TWIN TRIODE**	A.F. Amplifier	H	12·6 6·3	0·15 0·3	★	★	★	—	—	★	★	★
ECC91	**TWIN TRIODE**	R.F. Amplifier	H	6·3	0·45	★	★	★	—	—	★	★	★
ECF1	**TRIODE REMOTE CUT-OFF PENTODE**	A.F. and R.F. Amplifier	H	6·3	0·2	150 250	8·0 5·0	−3 −2	— See Note	— 2·0	2200 2000	20 —	9000 Ohms 1·6
ECH2	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·95	250	3·25	$(G_1{}^h)$ −2·5	$(G_{2+4}{}^h)$ 100	6·0	Conv. 750	—	1·5
ECH3 **ECH3G**	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·2	★	★	★	★	★	★	—	★
ECH4 **ECH4G**	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·35	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
15,000	0·28	$2{\cdot}8_{t_1}$ $2{\cdot}7_{t_2}$	Cathode Bias Resistor 920 Ω. Total Harmonic Distortion 8·5%. As R.C. Amplifier (400 V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Cathode Resistor 3900 Ω. Gain = 25. Values are for each unit.	28	H	A^{II}	G_1^{II}	K^{II} S	A^{I}	G_1^{I}	K^{I}	H	—	—	—	**ECC40**
		★	★ *For data and notes refer type* 12AT7.	32	A^{II}	G_1^{II}	K^{II}	H	H	A^{I}	G_1^{I}	K^{I}	H_t	—	—	**ECC81**
—	—	1·5	★ *For data and notes refer type* 12AU7.	32	A^{II}	G_1^{II}	K^{II}	H	H	A^{I}	G_1^{I}	K^{I}	H_t	—	—	**ECC82**
—	—	1·7	★ *For data and notes refer type* 12AX7.	32	A^{II}	G_1^{II}	K^{II}	H	H	A^{I}	G_1^{I}	K^{I}	H_t	—	—	**ECC83**
—	—	1·6	★ *For data and notes refer type* 6J6.	21	A^{II}	A^{I}	H	H	G_1^{I}	G_1^{II}	K	—	—	—	—	**ECC91**
— —	— —	1·4 0·004	Series Screen Resistor 75,000 Ω Mutual Conductance = 20 μmhos at − 40 volts Grid (G_1^p) Bias.	26	M	H	H	K G_3^p	A^t	G_1^t	G_2^p	A^p	—	G_1^p	—	**ECF1**
—	—	0·015	Conversion Conductance = 2 μmhos at − 34 volts Grid (G_1^h) Bias. Osc. Plate 100 V. at 9·5 mA. Osc. Grid Current 0·2 mA. Osc. Grid Resistor 50,000 Ω.	26	M	H	H	K G_3^h	A^t	G_3^h G_1^t	G_2^h G_4^h	A^h	—	G_1^h	—	**ECH2**
	—	0·003	★ *For data and notes refer type* ECH33.	26	M	H	H	K G_2^h G_4^h	A^t	G_3^h G_1^t	G_2^h G_4^h	A^h	—	G_1^h	—	**ECH3**
				30	M	H	A^h		G_1^t	A^t	H	K	—	G_1^h	—	**ECH3G**
—	—	0·002	★ *For data and notes refer type* ECH34.	26	K M G_3^h	H	H	A^t G_2^h G_4^h	G_3^h	G_1^t	G_2^h G_4^h	A^h		G_1^h		**ECH4**
				30	G_3^h	H	A^h		G_1^t	A^t	H	G_5^h K M	—	G_1^h	—	**ECH4G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
ECH11	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·2	250	2·2	$(G_1{}^h)$ −2	$(G_{2+4}{}^h)$ See Note	2·8	Conv. 640	—	>1·0
ECH21	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·33	★	★	★	★	★	★	—	★
ECH33 ECH33B	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·2	250	3·0	$(G_1{}^h)$ −2	$(G_{2+4}{}^h)$ See Note	3·0	Conv. 650	—	1·3
ECH34	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·35	250	3·0	$(G_1{}^h)$ −2	$(G_{2+4}{}^h)$ 100 See Note	6·2	Conv. 750	—	1·4
ECH35	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·3	250	3·0	$(G_1{}^h)$ −2	$(G_{2+4}{}^h)$ 100	3·0	Conv. 650	—	1·3
ECH35A	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·2	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECCIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·001	Screen connected to junction of two Resistors in series, R_1 = 35,000 Ω and R_2 = 60,000 Ω, R_1 is connected to B+ and R_2 to B—. Osc. Plate 150 V. at 3·3 mA. Osc. Grid Current 0·2 mA. Osc. Grid Resistor 50,000 Ω. Osc. G_m = 2800 μmhos. Conversion Conductance = 6·4 μmhos at — 16 volts Grid Bias.	27	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	K M	A^h	H	H	$G_3{}^h$ $G_1{}^t$	A^t	—	—	—	ECH11
—	—	0·002	★ *For data and notes refer type* ECH34.	29	H	A^h	A^t	$G_1{}^t$	$G_3{}^h$ $G_4{}^h$	$G_1{}^h$	$G_3{}^h$	H	—	—	K $G_4{}^h$ S	ECH21
—	—	0·003	ECH33B fitted with larger top-cap. Screen connected to junction of two Resistors in series, R_1 = 24,000 Ω and R_2 = 33,000 Ω, R_1 is connected to B+ and R_2 to B—. Conversion Conductance = 6·5 μmhos at — 23·5 volts Grid ($G_1{}^h$) Bias. Osc. Plate 100 V. at 3·3 mA. Osc. Grid Current 0·2 mA. Osc. Grid Resistor 50,000 Ω. Osc. G_m = 2800 μmhos.	30	M	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$	A^t	H	K	—	$G_1{}^h$	—	ECH33 ECH33B
—	—	0·003	Series Screen Resistor 24,000 Ω (250 V. supply). Conversion Conductance = 7·5 μmhos at — 24·5 volts Grid ($G_1{}^h$) Bias. Osc. Plate 120 V. at 4·5 mA fed from 250 V. through 20,000 Ω. Osc. Grid Current 0·19 mA. Osc. G_m = 550 μmhos.	30	$G_2{}^h$	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$	A^t	H	K M	—	$G_1{}^h$	—	ECH34
—	—	0·003	Conversion Conductance = 6·5 μmhos at — 17 volts Grid Bias. Osc. Plate 100 V. at 3·3 mA. Osc. Grid Current 0·2 mA. Osc. Grid Resistor 50,000 Ω. Osc. G_m = 2800 μmhos.	30	M	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$ $G_3{}^h$	A^t	H	K	—	$G_1{}^h$	—	ECH35
—	—	0·003	★ *For data and notes refer type* ECH33.	30	M	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$	A^t	H	K	—	$G_1{}^h$	—	ECH35A

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
ECH41	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·225	250	3·0	(G_1 h) −2	(G_{2+4} h) See Note	2·2	Conv. 500	—	2·0
ECH42	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·23	★	★	★	★	★	★	—	★
ECH80	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·23	★	★	★	★	★	★	—	★
ECH81	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·3	★	★	★	★	★	★	—	★
ECL11	**TRIODE POWER OUTPUT TETRODE**	A.F. and Class "A" Power Amplifier	H	6·3	1·0	250 250	2·0 36·0	−2·5 −6	— 250	— 4·0	2000 9000	70 —	0·035 0·025
ECL80	**TRIODE POWER OUTPUT PENTODE**	A.F., Class "A" Power, Frame Output Amplifier	H	6·3	0·3	★	★	★	★	★	★	★	★
EDD11	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	H	6·3	0·4	250	Zero Signal 2 x 3·5 Max. Signal 2 x 17·5	−6·3	—	—	—	—	—
EEP1	**SECONDARY EMISSION TETRODE**	Wide-band Amplifier	H	6·3	0·6	250	8·0	−2·5	150	0·45	17,000	—	0·05
EF2	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·4	250	4·5	−2	100	1·4	2800	—	1·4
EF5	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	250	8·0	−3	100	2·6	1700	—	1·2
EF6	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·1	Screen connected to junction of two resistors in series, R_1 = 33,000 Ω and R_2 = 47,000 Ω. R_1 is connected to B+ and R_2 to B−. Conversion Conductance = 5 μmhos at − 28 volts Grid (G_1^h) Bias. Osc. Plate Current 4·9 mA through 30,000 Ω (250 V. supply). Osc. Grid Resistor 20,000 Ω. Osc. Grid Current 0·35 mA. Osc. G_m = 550 μmhos.	28	H	A^h	A^t	G_1^t G_3^h	G_2^h G_4^h	G_1^h	K	H	—	—	—	**ECH41**
—	—	0·1	★ *For data and notes refer type* 6AN7.	28	H	A^h	A^t	G_1^t G_3^h	G_2^h G_4^h	G_1^h	K S	H	—	—	—	**ECH42**
—	—	0·1	★ *For data and notes refer type* 6AN7.	32	G_2^h G_4^h	G_1^h	K S	H	H	IC	A^h	A^t	G_3^h G_1^t	—	—	**ECH80**
—	—	0·01	★ *For data and notes refer type* 6AJ8.	32	G_2^h G_4^h	G_1^h	S K G_5^h	H	H	A^h	G_3^h	A_t	G_1^t	—	—	**ECH81**
—	—	1·5	Triode Unit (t).	27	A^t	G_1^t	K	A^o	H	H	G_2^o	G_1^o	—	—	—	**ECL11**
7000	3·8	0·9	Tetrode Unit (o). Total Harmonic Distortion 10%.													
★	★	1·0 0·2	★ *For data and notes refer type* 6AB8.	32	A^t	G_1^t	K S	H	H	A^p	G_2^p	G_2^p	G_1^p	—	—	**ECL80**
Plate to Plate 16,000	5·5	—	Driver Transformer Step-down ratio 3 : (1 + 1).	27	A^I	G_1^I	K M	NC	H	H	G_1^{II}	A^{II}	—	—	—	**EDD11**
—	—	0·006	Auxiliary Cathode (K^{II}) voltage 150 V. at − 6·5 mA.	26	M	H	H	K^I S	K^{II}	NC	G_2	A	—	G_1	—	**EEP1**
—	—	0·003	Mutual Conductance = 2 μmhos at − 22 volts Grid Bias.	26	M	H	H	K	G_2	NC	G_2	A	—	G_1	—	**EF2**
—	—	0·003	Mutual Conductance = 2 μmhos at − 46·5 volts Grid Bias.	26	M	H	H	K	G_2	NC	G_2	A	—	G_1	—	**EF5**
—	—	0·003	★ *For data and notes refer type* EF36.	26	M	H	H	K	G_2	NC	G_2	A	—	G_1	—	**EF6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
EF8	**LOW-NOISE REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier (Low Noise)	H	5·3	0·2	★	★	★	★	★	★	—	★
EF9	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EF11	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	250	5·7	−2	100 See Note	2·0	2200	—	2·0
EF12	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·2	250	3·0	−2	100	1·0	2100	—	2·0
EF13	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier (Low Noise)	H	6·3	0·2	250	4·5	−2	100	0·6	2300	—	0·5
EF22	**MEDIUM CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·2	250	6·0	−2·5	100	1·7	2200	—	1·2
EF36	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EF37	**SHARP CUT-OFF PENTODE**	A.F. Amplifier (Non-Microphonic)	H	6·3	0·2	★	★	★	★	★	★	—	★
EF37A	**SHARP CUT-OFF PENTODE**	A.F. Amplifier (Non-Microphonic, Low Hum)	H	6·3	0·2	250 200 100	3·0 3·0 3·0	−2 −2 −2	100 100 100	0·8 0·8 0·8	1800 1800 1800	— — —	2·5 2·0 1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·007	★ *For data and notes refer type* EF38.	26	M	H	H	K	G_4	G_2	G_3	A	—	G_1	—	**EF8**
—	—	0·002	★ *For data and notes refer type* EF39.	26	M	H	H	K	G_3	NC	G_2	A	—	G_1	—	**EF9**
—	—	0·002	Series Screen Resistor 75,000 Ω (250 V. supply). Mutual Conductance = 22 μmhos at — 45 volts Grid Bias. As R.C. Amplifier (250 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·6 meg. Cathode Resistor 1500 Ω. Gain = 98.	27	G_2	G_1	K G_3 M	NC	H	H	NC	A	—	—	—	**EF11**
—	—	0·002	Plate Current Cut-off at — 5 volts Grid Bias. As R.C. Amplifier (250 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·5 meg. Cathode Resistor 1600 Ω. Gain = 181.	27	G_2	G_1	K G_3 M	NC	H	H	NC	A	—	—	—	**EF12**
—	—	0·005	Grid No. 3 tied to Cathode. Mutual Conductance = 23 μmhos at — 17 volts Grid Bias.	27	G_2	G_1	K M	NC	H	H	G_3	A	—	—	—	**EF13**
—	—	0·002	Mutual Conductance = 22 μmhos at — 19 volts Grid Bias. As R.C. Amplifier (250 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·8 meg. Cathode Resistor 1750 Ω. Gain = 106.	29	H	A	G_2	G_3 S	NC	G_1	K	H	—	—	—	**EF22**
—	—	0·003	★ *For data and notes refer type* EF37A.	30	M	H	A	G_3	G_2	NC	H	K	—	G_1	—	**EF36**
— — —	— — —	0·02	★ *For data and notes refer type* EF37A.	30	M	H	A	G_2	G_3	—	H	K	—	G_1	—	**EF37**
— — —	— — —	0·02	Plate Current Cut-off at — 4·5 volts Grid Bias. As R.C. Amplifier (300 V. supply). Following Grid Leak 0·7 meg. Plate Resistor 0·3 meg. Screen Resistor 0·8 meg. Cathode Resistor 4000 Ω. Gain = 175.	30	M	H	A	G_2	G_3	—	H	K	—	G_1	—	**EF37A**

TYPE No	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
EF38	**LOW-NOISE REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier (Low Noise)	H	6·3	0·2	250	8·0	−2·5	(G_2) 250	0·2	1800	—	0·45
EF39	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	250	6·0	−2·5 See Note	100 See Note	1·7	2200	—	1·25
EF40	**SHARP CUT-OFF PENTODE**	A.F. Amplifier	H	6·3	0·2	250	3·0	−2	140	0·55	1850	—	2·5
EF41	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EF42	**SHARP CUT-OFF R.F. PENTODE**	Wide-band Amplifier	H	6·3	0·33	250	10·0	−2	250	2·3	9500	—	0·5
EF43	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·33	250	15·0	−2	135 See Note	3·5	6400	—	0·5
EF50	**REMOTE CUT-OFF R.F. PENTODE**	Wide-band Amplifier	H	6·3	0·3	250	10·0	(G_1) −2	250	3·0	6500	—	1·0
EF51	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·35	250	14·0	−2	250	2·6	9500	—	0·5
EF54	**SHARP CUT-OFF R.F. PENTODE**	U.H.F. Amplifier	H	6·3	0·3	250	10·0	−1·7	250	1·45	7700	—	0·5

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·007	Grid Nos. 2 and 4 tied to Cathode. Mutual Conductance = 18 µmhos at — 34 volts Grid Bias. Equivalent Noise Resistance = 3200 Ω.	30	M G_2	H	A	G_3	G_4	NC	H	K	—	G_1	—	**EF38**
—	—	0·003	Cathode Bias Resistor 325 Ω. Series Screen Resistor 90,000 Ω (250 V. supply). Mutual Conductance = 4·5 µmhos at — 49 volts Grid Bias.	30	M	H	A	G_2	G_3	NC	H	K	—	G_1	—	**EF39**
—	—	0·04	Plate Current Cut-off at — 5 volts Grid Bias. As R.C. Amplifier (250 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·22 meg. Screen Resistor 1·0 meg. Cathode Resistor 1500 Ω. Gain = 180.	28	H	A	IC	G_3	G_1	G_2	K S	H	—	—	—	**EF40**
—	—	0·002	★ *For data and notes refer type* type 6BH5.	28	H	A	IC	IC	G_2	G_1	K G_3 S	H	—	—	—	**EF41**
—	—	0·005	Plate Current Cut-off at — 4·5 volts Grid Bias.	28	H	A	S	G_3	G_2	G_1	K	H	—	—	—	**EF42**
—	—	0·006	Series Screen Resistor 33,000 Ω (250 V. supply). Mutual Conductance = 64 µmhos at — 28 volts Grid Bias.	28	H	A	S	G_3	G_2	G_1	K	H	—	—	—	**EF43**
—	—	0·007	Grid No. 3 Bias = 0. Gain Control by means of Grid No. 3. Mutual Conductance = 45 µmhos at — 54 volts Grid (G_3) Bias.	33	H	G_3	A	G_3	S	K	G_1	S	H	—	M	**EF50**
—	—	0·007	Mutual Conductance = 100 µmhos at — 8 volts Grid Bias.	29	H	A	K	G_3 S	G_2	G_1	K	H	—	—	—	**EF51**
—	—	0·02	Plate Current Cut-off at — 6 volts Grid Bias.	33	H	A	G_3	K G_3 S	K G_3 S	G_1	K G_3 S	K G_3 S	H	—	—	**EF54**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
EF55	**SHARP CUT-OFF PENTODE**	Video Amplifier	H	6·3	1·0	250	40	−4·5	250	5·5	12,000	—	0·055
EF70	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	100	3·0	−2	100	3·0	2300	—	0·1
EF72	**R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	100	7·0	−1·4	100	2·2	5000	—	0·3
EF73	**REMOTE CUT-OFF PENTODE**	A.F. Amplifier	H	6·3	0·2	100	7·5	−2	100	2·5	5000	—	0·25
EF80	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EF81	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EF85	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EF91	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EF92	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	250	8·0	−2·5	200	2·1	2500	—	—
EF93	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EF95	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·175	★	★	★	★	★	★	—	★
EFF50	**SHARP CUT-OFF R.F. PENTODE**	Push-pull R.F. Amplifier	H	6·3	0·58	300	10·0	−2	225	1·5	10,000	—	0·25
EFF51	**TWIN SHARP CUT-OFF R.F. PENTODE**	Push-pull R.F. Amplifier	H	6·3	0·75	300	10·0	−2	225	1·8	9000	—	0·25

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	
—	—	0·15	Plate Current Cut-off at — 10 volts Grid Bias.	33	H	G_2	A	G_3	S	K	G_1	S	H	—	—	**EF55**
—	—	0·02	Plate Current = 0·1 mA at — 8 volts Grid (G_1) Bias. Plate Current = 0·1 mA at — 8 volts Grid (G_3) Bias.	31	G_1	G_3	H	K	A	H	G_2	G_3	—	—	—	**EF70**
—	—	0·04		31	G_1	K G_3	H	K G_3	A	H	G_2	K G_3	—	—	—	**EF72**
—	—	0·5	Plate Current = 0·1 mA at — 50 volts Grid Bias.	31	G_1	G_3	H	A	G_2	H	K	A	—	—	—	**EF73**
—	—	0·007	★ *For data and notes refer type* 6BX6.	32	K	G_1	K	H	H	S	A	G_2	G_3	—	—	**EF80**
—	—	0·002	★ *For data and notes refer type* 6BH5.	32	G_2	G_1	K G_3 IS	H	H	A	IC	IC	NC	—	—	**EF81**
—	—	0·005	★ *For data and notes refer type* 6BY7.	32	K	G_1	K	H	H	S	A	G_2	G_3	—	—	**EF85**
—	—	0·008	★ *For data and notes refer type* 6AM6.	21	G_1	K	H	H	A	G_3 S	G_2	—	—	—	—	**EF91**
—	—	0·004	Mutual Conductance = 5 μmhos at — 28 volts Grid Bias. Frequency limit 160 Mc/s.	21	G_1	K	H	H	A	G_3 S	G_2	—	—	—	—	**EF92**
—	—	0·0035	★ *For data and notes refer type* 6BA6.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**EF93**
	—	0·02	★ *For data and notes refer type* 6AK5.	21	G_1	K IS G_3	H	H	A	G_2	K IS G_3	—	—	—	—	**EF95**
	—	0·04	Values are for each unit. Frequency limit 500 Mc/s. Equivalent Noise Resistance 600Ω	33	H	A'	G_2'	G_1'	K' K'' G_2' G_2''	G_1''	G_2''	A''	H	—	—	**EFF50**
—	—	0·04	Plate Current Cut-off at — 4·5 volts Grid Bias. Values are for each unit. Frequency limit 500 Mc/s. Equivalent Noise Resistance 750 Ω.	33	H	A'	G_2'	G_1'	K' K'' G_2' G_2''	G_1''	G_2''	A''	H	—	—	**EFF51**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
EFM1	**MEDIUM CUT-OFF PENTODE and TUNING INDICATOR**	A.F. Amplifier and Tuning Indicator	H	6·3	0·2	Supply 250	0·8	(G_1P) −2	40	0·6	—	—	0·8
EFM11	**MEDIUM CUT-OFF PENTODE and TUNING INDICATOR**	A.F. Amplifier and Tuning Indicator	H	6·3	0·2	Supply 250	1·0	(G_1P) −1·5	30	0·63	—	—	0·7
EFP60	**SECONDARY EMISSION SHARP CUT-OFF PENTODE**	Wide-band Amplifier	H	6·3	0·37	250	20	−2	250	1·5	25,000	—	0·07
EK1	**OCTODE**	Frequency Converter	H	6·3	0·4	250	1·6	(G_4) −1·5	(G_{3+5}) 70	2·8	Conv. 600	—	1·5
EK2 **EK2G**	**OCTODE**	Frequency Converter	H	6·3	0·2	★	★	★	★	★	★	—	★
EK3	**BEAM OCTODE**	Frequency Converter	H	6·3	0·6	250	2·5	(G_4) −2·5	(G_{3+5}) 100	5·5	Conv. 650	—	2·0
EK32	**OCTODE**	Frequency Converter	H	6·3	0·2	250	1·0	(G_4) −2	(G_{3+5}) 50	0·8	Conv. 550	—	2·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	As R.C. Amplifier (250 V. supply). Plate Resistor 0·13 meg. Screen Resistor 0·35 meg. Cathode Resistor 980 Ω. Tuning Indicator Screen 250 V. at 0·65 mA. Gain = 60. Shadow angle of a single sector > 70° measured at edge of screen with — 2 volts Grid (G_1^P) Bias and < 5° with — 20 volts Grid (G_1^P) Bias.	26	M	H	H	K G_2^P G_1^I	T	G_2^P	G_2^P DE	A^P	—	—	—	**EFM1**
—	—	—	As R.C. Amplifier (250 V. supply). Plate Resistor 0·13 meg. Screen Resistor 0·35 meg. Cathode Resistor 650 Ω. Tuning Indicator Screen 250 V. at 0·65 mA. Gain = 80. Shadow angle of a single sector 70° measured at edge of screen with — 1·5 volts Grid (G_1^P) Bias and 3° with — 20 volts Grid (G_1^P) Bias.	27	A^P	G_1^P	K G_2^P G_1^I	T	H	H	NC	G_2^P DE	—	—	—	**EFM11**
—	—	0·004	Auxiliary Cathode (K^{II}) voltage 150 V. at — 15·6 mA. Plate Current Cut-off at — 4 volts Grid Bias.	33	H	K^I	G_1	K^I	K^{II}	A	G_2 S	G_2	H	—	—	**EFP60**
—	—	—	Grid No. 2 70 V. at 2·0 mA. Osc. Grid (G_1) Current 0·19 mA. Osc. Grid Resistor 50,000 Ω.	26	M	H	H	K G_3	G_2	G_1	G_3 G_5	A	—	G_4	—	**EK1**
—	—	0·07	★ *For data and notes refer type* EK32.	26	M	H	H	K G_3	G_2	G_1	G_3 G_5	A	—	G_4	—	**EK2**
				30	M	H	A	G_2 G_5	G_1	G_2	H	K	—	G_4	—	**EK2G**
—	—	0·07	Conversion Conductance = 6·5 µmhos at — 38 volts Grid (G_4) Bias. Grid No. 2 100 V. at 5·0 mA. Osc. Grid (G_1) Current 0·3 mA. Osc. Grid Resistor 50,000 Ω. Cathode Resistor 190 Ω.	26	M	H	H	K G_3	G_2	G_1	G_3 G_5	A	—	G_4	—	**EK3**
	—	0·07	Conversion Conductance = 2 µmhos at — 25 volts Grid (G_4) Bias. Grid No. 2 200 V. at 2·5 mA. Osc. Grid (G_1) Current 0·3 mA maximum. Osc. Grid Resistor 50,000 Ω. Cathode Resistor 500 Ω.	30	M	H	A	G_2 G_5	G_1	G_2	H	K	—	G_4	—	**EK32**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
EL1	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·4	250	32	−18·5	250	4·5	2600	—	0·048
EL2	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EL3N **EL3NG**	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·9	★	★	★	★	★	★	—	★
EL5 **EL5G**	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·3	250	72	−14	275	7·0	8500	—	0·022
EL6	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·2	250	72	−7	250	8·0	14,500	—	0·02
EL11 **EL11N**	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·9	250	36	−6	250	4·0	9000	—	0·05
EL12	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·2	250	72	−7	250	8·0	15,000	—	0·025
EL22	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·7	250	44	−7	250	5·2	9500	—	—
EL32	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·2	250	32	−18	250	5·0	2800	—	0·07
EL33	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·9	250	36	−6	250	4·0	9000	—	0·05
EL33A													
EL33B		Class "AB" Power Amplifier (two Valves)				250	Zero Signal 2 x 24 Max. Signal 2 x 28·5	See Note	250	Zero Signal 2 x 2·8 Max. Signal 2 x 4·6	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
7000	See Note	1·1	Power output = 2·8 W. at 10% Total Harmonic Distortion or 1·4 W. at 5% Total Harmonic Distortion.	26	NC	H	H	K G_3	NC	NC	G_2	A	—	G_1	—	**EL1**
★	★	0·6	★ *For data and notes refer type* EL32.	26	NC	H	H	K G_3	NC	NC	G_2	A	—	G_1	—	**EL2**
★	★	0·8	★ *For data and notes refer type* EL33.	26	NC	H	H	K G_3 M	NC	G_1	G_2	A	—	—	—	**EL3N**
				30	NC	H	A	G_2	G_1	—	H	K M	—	—	—	**EL3NG**
3500	8·8	0·8	Cathode Resistor for Self-bias 175 Ω. Total Harmonic Distortion 10%.	26	NC	H	H	K G_3 M	NC	G_1	G_2	A	—	—	—	**EL5**
				30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**EL5G**
3500	8·0	0·7	Cathode Resistor for Self-bias 90 Ω. Total Harmonic Distortion 10%.	26	NC	H	H	K G_3 M	NC	G_1	G_2	A	—	—	—	**EL6**
7000	4·5	0·8	Cathode Resistor for Self-bias 150 Ω. Total Harmonic Distortion 10%.	27	G_2	G_1	K G_3	NC	H	H	NC	A	—	—	—	**EL11**
					G_2	G_1	K G_3 M	NC	H	H	NC	A	—	—	—	**EL11N**
3500	8·0	0·7	Cathode Resistor for Self-bias 90 Ω. Total Harmonic Distortion 10%.	27	G_2	G_1	K M G_3	NC	H	H	NC	A	—	—	—	**EL12**
5750	5·2	1·0	Cathode Resistor for Self-bias 140 Ω. Total Harmonic Distortion 10%.	29	H	A	G_2	NC	NC	G_1	K G_3	H	—	—	—	**EL22**
8000	3·6	—	Total Harmonic Distortion 10%.	30	NC	H	A	G_2	NC	—	H	K G_3	—	G_1	—	**EL32**
7000	4·5	1·0	Cathode Resistor for Self-bias 150 Ω. Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**EL33**
					NC	H	A	G_2	G_1	—	H	K M G_3	—	—	—	**EL33A**
Plate to Plate 10,000	8·2		Cathode Bias Resistor 140 Ω. Total Harmonic Distortion 3·1%.		M	H	A	G_2	G_1	—	H	K G_3	—	—	—	**EL33B**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
EL34	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	6·3	1·5	250 See Note	100	−13·5	265	14·9	11,000	—	0·015
		Class "AB" Power Amplifier (two Valves)				Supply 375	Zero Signal 2 x 75 Max. Signal 2 x 95	See Note	See Note	Zero Signal 2 x 11·5 Max. Signal 2 x 22·	—	—	—
		Class "B" Power Amplifier (two Valves)				775 See Note	Zero Signal 2 x 25 Max· Signal 2 x 91	−39	See Note	Zero Signal 2 x 3 Max. Signal 2 x 19	—	—	—
		Class "A" Power Amplifier (Triode Connected)				See Note	70	See Note	—	—	—	—	—
		Class "AB" Power Amplifier (two Valves Triode Connected)				See Note	Zero Signal 2 x 65 Max. Signal 2 x 71	See Note	—	—	—	—	—
EL35	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	6·3	1·35	250	72	−15·5	250	8·0	5000	—	0·0155
		Class "AB" Power Amplifier (two Valves Self-bias)				360	Zero Signal 2 x 44 Max. Signal 2 x 53	See Note	270	Zero Signal 8·5 Max Signal 17·5		—	—
		Class "AB" Power Amplifier (two Valves fixed bias)				360	Zero Signal 2 x 44 Max. Signal 2 x 70	26	270	Zero Signal 8·5 Max. Signal 19·5	—	—	—
EL37	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	6·3	1·4	250	100	−13·5	270	13·5	11,000	—	0·0135
EL38	POWER OUTPUT PENTODE	Line Output Amplifier	H	6·3	1·4	600	42	−22	400	5·0	7000	—	0·043
						250	100	−7	250	13·0	14,300	—	0·021
EL41	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	6·3	0·71	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
2000	11·0		Plate supply voltage = 265 V. Total Harmonic Distortion 10%.													
Plate to Plate 3400	35·0		Total Harmonic Distortion 5%. Cathode Bias Resistor 130 Ω. Common Series Screen Resistor 470 Ω (375 V. supply).													
Plate to Plate 11,000	100·0	1·0	Plate supply voltage = 800 V. Common Series Screen Resistor 750 Ω (400 V. supply). R.M.S. Grid to Grid volts = 23·4. Total Harmonic Distortion 5%.	30	G_2	H	A	G_2	G_1	NC	H	K	—	—	—	**EL34**
3000	6·0		Screen tied to Anode (375 V. supply). Cathode Bias Resistor 370 Ω. Total Harmonic Distortion 8%.													
Plate to Plate 5000	16·5		Screen tied to Anode (400 V. supply). Cathode Bias Resistor 220 Ω. R.M.S. Grid to Grid volts = 22. Total Harmonic Distortion 3%.													
2500	6·0		Total Harmonic Distortion 10%. Cathode Resistor for Self-bias 180 Ω.													
Plate to Plate 7000	21·0	1·0	Total Harmonic Distortion 3%. Cathode Bias Resistor 250 Ω.	30	—	H	A	G_2	G_1	—	H	K G_2	—	—	—	**EL35**
Plate to Plate 6250	26·0		Total Harmonic Distortion 3%.													
2500	10·5	1·0	Total Harmonic Distortion 10%. Cathode Resistor for Self-bias 120 Ω.	30	—	H	A	G_2	G_1	—	H	K G_2	—	—	—	**EL37**
		1·2	Peak Plate Voltage = 4 kV. maximum.	30	G_2	H	NC	G_2	G_1	—	H	K	—	A	—	**EL38**
★	★	1·0	★ *For data and notes refer type* 6M5.	28	H	A	IC	NC	G_2	G_1	K G_2	H	—	—	—	**EL41**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
EL42	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·2	225	26	See Note	225	4·1	3200	—	0·09
EL50	**POWER OUTPUT PENTODE**	Class "B" Power Amplifier (two Valves)	H	6·3	1·35	775 See Note	Zero Signal 2 x 15 Max. Signal 2 x 70	—40	See Note	Zero Signal 2 x 1·0 Max. Signal 2 x 24	—	—	—
EL51	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·9	750 500	60 87	—37·5 —20·0	750 500	10·0 13·0	8000 11,000	— —	0·05 0·033
EL60	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier Class "AB" Power Amplifier	H	6·3	1·35	★	★	★	★	★	★	—	★
EL70	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·45	100	31	—9	100	2·2	5000	—	0·015
EL80	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier Class "AB_1" Power Amplifier	H	6·3	0·71	★	★	★	★	★	★	—	★
EL81	**LINE OUTPUT PENTODE**	Line Output Amplifier and Class "B" Power Amplifier	H	6·3	1·05	★	★	★	★	★	★	—	—
EL83	**PENTODE**	Video Amplifier	H	6·3	0·71	★	★	★	★	★	★	—	★
EL91	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EM1	**TUNING INDICATOR with TRIODE**	Tuning Indicator	H	6·3	0·2	Target Volts 250	Target Current 0·13	0 for Shadow Angle 74°	—	—	—	—	—
EM2	**TUNING INDICATOR with TRIODE**	Tuning Indicator	H	6·3	0·2	Target Volts 250	Target Current 0·15	0 for Max. Shadow Angle	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C	B.S	TYPE No.
9000	2·8	0·2	Total Harmonic Distortion 12%. Cathode Bias Resistor 360 Ω.	28	H	A	IC	NC	G_2	G_1	K G_3	H	—	—	—	**EL42**
Plate to Plate 18,000	80	0·8	Plate supply voltage = 800 V. Series Screen Resistor 500 Ω. (400 V. supply). Total Harmonic Distortion 10%. R.M.S. Grid to Grid volts = 28.	26	NC	H	H	K M	G_2	G_1	G_2	NC	—	A	—	**EL50**
—	—	1·5		26	NC	H	H	K G_3	NC	G_1	G_2	NC	—	A	—	**EL51**
★	★	1·1	★ *For data and notes refer type* EL34.	33	H	G_2	A	NC	NC	G_2	G_1	K	H	—	—	**EL60**
3000	1·25	—														**EL70**
★	★	1·0	★ *For data and notes refer type* 6M5.	32	G_2	G_1	K G_3	H	H	IC	A	IC	NC	—	—	**EL80**
—	—	—	★ *For data and notes refer type* 21A6.	32	IC	G_1	K	H	H	IC	IC	G_2	G_2	A	—	**EL81**
—	—	0·1	★ *For data and notes refer type* 15A6.	32	G_2	G_1	K	H	H	G_2	A	S	NC	—	—	**EL83**
★	★	0·5	★ *For data and notes refer type* 6AM5.	21	G_1	K G_3	H	H	A	NC	G_2	—	—	—	—	**EL91**
—	—	—	Triode Plate Resistor 2·0 meg. Triode Plate Current 0·095 mA. Shadow Angle 0° for — 5 volts Grid (G_1^t) Bias.	26	NC	H	H	K	NC	G_1^t	T	A^t DE	-	—	—	**EM1**
	—	—	Triode Plate Resistor 2·0 meg. Triode Plate Current 0·1 mA. Min. Shadow Angle at — 6 volts Grid (G_1^t) Bias.	26	NC	H	H	K	G_1^i	G_1^t	T	A^t DE	—	—	—	**EM2**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
EM3	TUNING INDICATOR with TRIODE	Tuning Indicator	H	6·3	0·2	Target Volts 250	Target Current 0·3	0 for Max. Shadow Angle	—	—	—	—	—
EM4	TUNING INDICATOR with TRIODES	Tuning Indicator	H	6·3	0·2	★	★	★	—	—	—	—	—
EM34	TUNING INDICATOR with TRIODES	Tuning Indicator	H	6·3	0·2	Target Volts 250	Target Current 2·0	0 for Shadow Angle of 90° in each case	—	—	—	—	—
EN31	GAS-FILLED TRIODE	Relaxation Oscillator	H	6·3	1·3	1000 Peak Max.	10 Max.	—	—	—	—	—	—
		Half-wave Rectifier				350 Max.	D.C. Output 40 Max.	—	—	—	—	—	—
EQ40	ENNEODE	F.M. Detector and Limiter	H	6·3	0·2	★	★	★	★	★	—	—	★
EQ80	ENNEODE	F.M. Detector and Limiter	H	6·3	0·2	★	★	★	★	★	—	—	★
EY51	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier	H	6·3	0·09	★	★	—	—	—	—	—	—
EY70	HALF-WAVE RECTIFIER	Half-wave Rectifier	H	6·3	0·45	Max. R.M.S. 300	D.C. Output 45 Max.	—	—	—	—	—	—
EY80	HALF-WAVE VACUUM RECTIFIER	Booster Diode	H	6·3	0·9	★	★	—	—	—	—	—	—
EY91	HALF-WAVE VACUUM RECTIFIER	Half-wave Rectifier	H	6·3	0·42	Max. R.M.S. 250	D.C. Output 75 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Triode Plate Resistor 1·0 meg. Triode Plate Current 0·2 mA. Min. Shadow Angle at — 21 volts Grid (G_1^t) Bias.	26	NC	H	H	K G_1^i	NC	G_2^t	T	A^t DE	—	—	—	**EM3**
—	—	—	★ *For data and notes refer type* EM34.	26	NC	H	H	K G_1^i	A^I DE^I	G_2^t	T	A^{II} DE^{II}	—	—	—	**EM4**
—	—	—	Dual sensitivity type. Triode Plate Resistor 1·0 meg for each plate lead. Min. Shadow Angles occur at — 5 volts and — 16 volts Grid (G_1^t) Bias, respectively.	30	NC	H	A^I DE^I	G_1^t	T	A^{II} DE^{II}	H	K G_1^i	—	—	—	**EM34**
—	—	2·3	Valve voltage drop 33 V. Grid Resistor not less than 750 Ω per max. instantaneous unit voltage applied to the Grid. Frequency limit 150 Kc/s.	30	NC	H	NC	—	G_1	—	H	K	—	A	—	**EM31**
—	—		Grid connected to Cathode Condenser Input to Filter 6 μF maximum. Plate Supply Impedance = 100 Ω minimum.													
—	—	—	★ *For data and notes refer type* 6BE7.	28	H	A	G_2 G_4 G_6	G_5	G_1	G_3	G_7 K	H	—	—	—	**EQ40**
—	—	—	★ *For data and notes refer type* 6BE7.	32	G_2 G_4 G_6	G_3	K G_7	H	H	A	G_1	K G_7	G_5	—	—	**EQ80**
—	—	—	★ *For data and notes refer type* 6X2.	3	H K	H	A	—	—	—	—	—	—	—	—	**EY51**
—	—	—														**EY70**
—	—	—	★ *For data and notes refer type* 19X3.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**EY80**
—	—	—	Condenser Input to Filter 32 μF maximum. Plate Supply Impedance = 100 Ω minimum.	21	A	K	H	H	A	NC	NC	—	—	—	—	**EY91**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
EZ2	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·4	Max. R.M.S. 2 x 350	D.C. Output 60 Max.	—	—	—	—	—	—
EZ2 / 6X5GT	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	★	★	—	—	—	—	—	—
EZ3	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·65	Max. R.M.S 2 x 400	D.C. Output 100 Max.	—	—	—	—	—	—
EZ4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·9	Max. R.M.S. 2 x 400	D.C. Output 175 Max.	—	—	—	—	—	—
EZ11	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·29	Max. R.M.S. 2 x 250	D.C. Output 60 Max.	—	—	—		—	—
EZ12	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·85	Max. R.M.S. 2 x 500	D.C. Output 100 Max.	—	—	—	—	—	—
EZ35	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	★	★	—	—	—	—	—	—
EZ40	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	★	★	—	—	—	—	—	—
EZ41	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·4	Max. R.M.S. 2 x 250	D.C. Output 60 Max.	—	—	—	—	—	—
EZ80	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	★	★	—	—	—	—	—	—
EZ82	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	Max. R.M.S. 2 x 300† 2 x 260*	D.C. Output 80† Max. 50* Max.	—	—	—	—	—	—
F443N	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	4·0	2·0	300 550	83 45	−40 −30	300 200	4·6 1·4	3900 3200	— —	0·02 0·03

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Condenser Input to Filter 16 μF maximum. Plate Supply Impedance per Plate = 500 Ω min.	26	NC	H	H	K	A[I]	NC	NC	A[II]	—	—	—	**EZ2**
—	—	—	★ *For data and notes refer type* 6X5GT.	26	NC	H	H	K	A[I]	NC	NC	A[II]	—	—	—	**EZ2 / 6X5GT**
—	—	—	Condenser Input to Filter 16 μF maximum. Plate Supply Impedance per Plate = 300 Ω min.	26	NC	H	H	K	A[II]	NC	NC	A[I]	—	—	—	**EZ3**
—	—	—	Condenser Input to Filter 16 μF maximum. Plate Supply Impedance per Plate = 300 Ω min.	26	NC	H	H	K	A[II]	NC	NC	A[I]	—	—	—	**EZ4**
—	—	—	Condenser Input to Filter 60 μF maximum. Plate Supply Impedance per Plate = 600 Ω min.	27	A[I]	K	M	NC	H	H	NC	A[II]	—	—	—	**EZ11**
—	—	—	Condenser Input to Filter 32 μF maximum. Plate Supply Impedance per Plate = 300 Ω min.	27	A[I]	K	NC	NC	H	H	NC	A[II]	—	—	—	**EZ12**
—	—	—	★ *For data and notes refer type* 6X5G.	30	NC	H	A[I]	NC	A[II]	NC	H	K	—	—	—	**EZ35**
—	—	—	★ *For data and notes refer type* 6V4.	28	H	A[I]	NC	NC	NC	A[II]	K	H	—	—	—	**EZ40**
—	—	—	Condenser Input to Filter 32 μF. Plate Supply Impedance = 300 Ω min.	28	H	A[I]	NC	NC	NC	A[II]	K	H	—	—	—	**EZ41**
—	—	—	★ *For data and notes refer type* 6V4.	32	A[I]	NC	K	H	H	NC	A[II]	NC	NC	—	—	**EZ80**
	—	—	† With heater connected to Cathode Plate Supply Impedance per Plate = 215 Ω min. * With heater not connected to Cathode Plate Supply Impedance per Plate = 150 Ω min.	32	A[I]	NC	K	H	H	NC	A[II]	NC	NC	—	—	**EZ82**
3600	10·3	3·0	Cathode Bias Resistor 455 Ω. Total Harmonic Distortion 10% in each case.	14	A	F	G_1	F	G_2	—	—	—	—	—	—	**F443H**
12,000	12·0		Cathode Bias Resistor 650 Ω.	15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage	Current								
				Volts	Amps	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
GZ32 GZ32 / 5V4G	FULL-WAVE VACUUM RECTIFIER	Full-wave Rectifier	H	5·0	2·0	Max. R.M.S. 2 x 500	D.C. Output 125 Max.	—	—	—	—	—	—
KB2	TWIN DIODE	Detector, Rectifier	H	2·0	0·095	Peak 125 Max. per Plate	0·5 Max. per Plate	—	—	—	—	—	—
KBC1	DUO-DIODE TRIODE	Detector A.F. Amplifier	F	2·0	0·115	135	2·5	−4·5	—	—	1000	16	0·016
KBC32	DUO-DIODE TRIODE	Detector A.F. Amplifier	F	2·0	0·05	100	2·4	0	—	—	1200	25	0·021
KC1	AMPLIFIER TRIODE	A.F. Amplifier	F	2·0	0·065	135	1·2	−1·5	—	—	600	25	0·04
KC3	AMPLIFIER TRIODE	A.F. Amplifier	F	2·0	0·21	135	3·0	−2·8	—	—	2500	30	0·012
KC4	AMPLIFIER TRIODE	A.F. Amplifier	F	2·0	0·1	135	2·2	−1·5	—	—	1400	30	0·0215
KCF30	TRIODE PENTODE	Frequency Converter	F	2·0	0·2	100 120	— 0·53	(G_2[i]) 0 (G_1[p]) −1·5	— 60	— 0·97	1700 260 Conv.	18 —	— —
KCH1	TRIODE HEXODE	Frequency Converter	F	2·0	0·18	135	1·0	(G_1[h]) −0·5	55	1·2	Conv. 325	—	1·5

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Condenser Input to Filter 60 μF. Plate Supply Impedance per Plate = 150 Ω min.	30	NC	H	NC	A^1	NC	A^{11}	NC	H K	—	—	—	GZ32 GZ32 / 5V4G
	—	—		12	D_1	D_2	F+	F− M	K	—	—	—	—	—	—	KB2
—	—	3·1	As R.C. Amplifier (135 V. supply). Plate Resistor 0·2 meg. Grid Bias — 2 volts. Plate Current 0·35 mA. Gain = 12·5.	26	M	F−	F+	NC	D_1	D_2	NC	A	—	G_1	—	KBC1
				17	F+	A	D_1	D_2	M	F−	—	—	—	G_1	—	
—	—	3·1	As R.C. Amplifier (120 V. supply) Plate Resistor 0·1 meg. Grid Bias — 0·9 volts. Plate Current 0·5 mA.	30	M	F+	A	D_1	D_2	—	F−	—	—	G_1	—	KBC32
—	—	3·5	As R.C. Amplifier (135 V. supply). Plate Resistor 0·32 meg. Grid Bias — 1·5 volts. Plate Current 0·18 mA. Gain = 19.	26	NC	F	F	NC	NC	G_1	NC	A	—	—	—	KC1
	—	6·3	Designed to drive a class B Output Valve KDD1 using a Driver Transformer having a ratio of 2 : (1 + 1).	26	NC	F	F	NC	NC	G_1	NC	A		—	—	KC3
—	—	2·9	As R.C. Amplifier (135 V. supply). Plate Resistor 0·2 meg. Grid Bias — 1·5 volts. Plate Current 0·32 mA. Gain = 21·5.	26	M	F	F	NC	NC	G_1	NC	A	—	—	—	KC4
—	—	2·0	Conversion Conductance = 10 μmhos at — 14 volts Grid ($G_1{}^p$) Bias. Triode Grid Resistor 50,000 Ω returned to F+.	30	M	F+	A^p	$G_2{}^p$	$G_1{}^t$	A^t	F−	NC		$G_1{}^p$	—	KCF30
—	—	0·01	Peak Osc. Grid Voltage applied to Pentode Grid No. 3 = 8 V. min.													
—	—	0·05	Conversion Conductance = 3 μmhos at — 8 volts Grid ($G_1{}^h$) Bias. Osc. Plate 70 V. at 3·0 mA. Osc. Grid Resistor 25,000 Ω. Osc. Grid Current 0·28 mA. Osc. G_m = 1300 μmhos.	26	M	F	F	NC	A^t	$G_1{}^t$ $G_3{}^h$	$G_2{}^h$ $G_4{}^h$	A^h	—	$G_1{}^h$	—	KCH1

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
KDD1	TWIN POWER OUTPUT TRIODE	Class "B" Power Amplifier	F	2·0	0·22	135	Zero Signal 2 x 1·5 Max. Signal 2 x 14	0	—	—	—	—	—
KF1	SHARP CUT-OFF R.F. PENTODE	R.F. Amplifier	F	2·0	0·2	135	3·0	0	135	1·0	1800	—	0·9
KF2	MEDIUM CUT-OFF R.F. PENTODE	R.F. Amplifier	F	2·0	0·2	135	3·0	0	135	1·0	1300	—	1·1
KF3 KF3G	MEDIUM CUT-OFF R.F. PENTODE	R.F. Amplifier	F	2·0	0·045	135	2·0	−0·5	135	0·6	650	—	1·3
KF4	SHARP CUT-OFF PENTODE	R.F. and A.F. Amplifier	F	2·0	0·065	135	2·6	−0·5	135	1·0	800	—	0·8
KF35	SHARP CUT-OFF R.F. PENTODE	R.F. Amplifier	F	2·0	0·05	120	1·45	−1·5	60	0·5	1080	—	—
KK2 KK2G	OCTODE	Frequency Converter	F	2·0	0·13	★	★	★	★	★	★	—	★
KK32	OCTODE	Frequency Converter	F	2·0	0·13	135	0·7	(G_4) −0·5	(G_{3+5}) 45	0·7	Conv. 270	—	2·5
KL2	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	2·0	0·265	135	18·0	−12	135	2·0	2000	—	0·03
KL4 KL4G	POWER OUTPUT PENTODE	Class "A" Power Amplifier	F	2·0	0·15	135	7·0	−5	135	1·1	2100	—	0·13

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C	B.S.	TYPE No.
10,000	2·0	—	Total Harmonic Distortion 10%.	26	NC	F	F	NC	A"	G_1'	G_1"	A'	—	–		KDD1
—	—	0·01	Plate Current Cut-off at 3·5 volts Grid Bias.	24	G_2	NC	F	F	G_3	G_1	M		—	A	—	KF1
				17	F	G_2	M	G_1	G_3	F	—			A	—	
—	—	0·01	Mutual Conductance = 2 μmhos at — 16 volts Grid Bias.	24	G_2	NC	F	F	G_3	G_1	M	—	—	A	—	KF2
				17	F	G_2	M	G_1	G_3	F	—	—	—	A	—	
		0·006	Mutual Conductance = 6·5 μmhos at — 13·5 volts Grid Bias.	26	M	F	F	NC	G_3	NC	G_3	A	—	G_1	—	KF3
				30	M	F	A	G_2	NC	—	F	NC	—	G_1	—	KF3G
—	—	0·008	Plate Current Cut-off at — 7 volts Grid Bias. As R.C. Amplifier (135 V. supply). Following Grid Leak 1·0 meg Plate Resistor 0·32 meg Screen Resistor 0·64 meg. Bias — 1·5 volts (Cathode Current 0·41 mA). Gain = 72.	26	M	F	F	NC	G_3	NC	G_2	A	—	G_1	—	KF4
—	—	0·1	Mutual Conductance = 10 μmhos at — 9·5 volts Grid Bias.	30	M	F+	A	G_2	G_3	—	F−	—	—	G_1	—	KF35
—	—	0·07	★ *For data and notes refer type* KK32.	26	M	F− G_6	F+	NC	G_2	G_1	G_3 G_5	A	—	G_4	—	KK2
				20	F−	M	A	G_2 G_3 G_5	G_1	G_3 G_5	F+	—		G_4		
				30	M	F+	A		G_1	G_2	F−	NC	—	G_4	—	KK2G
—	—	0·07	Conversion Conductance = 2 μmhos at — 12 volts Grid (G_4) Bias. Grid No. 2 135 V. at 2·1 mA. Osc. voltage = 8·5 V. R.M.S.	30	M	F+	A	G_3 G_5	G_1	G_2	F− G_6	—	—	G_4	—	KK32
6000	0·8	—		26	NC	F G_3	F	NC	NC	G_1	G_2	A	—	—	—	KL2
19,000	0·44	—	Total Harmonic Distortion 10%.	26	NC	F G_3	F	NC	NC	G_1	G_2	A	—	—	—	KL4
				30	NC	F+	A	G_2	G_1	—	F− G_3	NC	—	—	—	KL4G

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
KL5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·1	135	8·5	−6·5	135	1·5	1700	—	0·135
KL35	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·15	135	5·6	−4·5	135	—	2200	—	0·15
KLL32	**TWIN POWER OUTPUT PENTODE**	Push-pull Power Amplifier	F	2·0	0·3	135	Zero Signal 3·8 Max. Signal 16·9	−11·3	135	Max. Signal 5·7	—	—	—
KT61	**POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	6·3	0·95	250	40	See Note	250	7·5	10,500	—	0·075
KT71	**POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	48·0	0·16	175	70	−9·8	175	12	—	—	—
N78	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·64	★	★	★	★	★	—	—	
PL21	**GAS-FILLED TETRODE**	Relay Service	H	6·3	0·6	★	—	★	★	—	—	—	
PL33	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	19·0	0·3	225	32	−5·3	225	3·4	9000	—	0·05
PL36	**POWER OUTPUT PENTODE**	Line Output Amplifier	H	30·0	0·3	200	75	−5·5	200	9·0	13,500	—	0·02
PL81	**LINE OUTPUT PENTODE**	Line Output Amplifier and Class "B" Power Amplifier	H	21·5	0·3	★	★	★	★	★	★	—	—
PL82	**POWER OUTPUT PENTODE**	Frame Output Amplifier, Class "A" Power Amplifier	H	16·5	0·3	★	★	★	★	★	★	—	★
PL83	**VIDEO OUTPUT PENTODE**	Video Amplifier	H	15·0	0·3	★	★	★	★	★	★	—	★
PY31	**HALF-WAVE RECTIFIER**	Half-wave Rectifier	H	17·0	0·3	Max. R.M.S. 250	D.C. Output 125 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
16,000	0·53	0·6	Total Harmonic Distortion 10%.	26	NC	F	F G_3	NC	NC	G_1	G_2	A	—			**KL5**
19,000	0·34		Fixed Bias condition. Total Harmonic Distortion 10%.	30	—	F+	A	G_2	G_1	—	F G_2	—	—	—	—	**KL35**
Plate to Plate 16,000	1·2	—	Total Harmonic Distortion 2·8%.	30	NC	F	A^{II}	G_1^{II}	G_1^{I}	A^{I}	F G_2^{I} G_2^{II}	G_2^{I} G_2^{II}	—	—	—	**KLL32**
6000	4·3	1·6	Cathode Bias Resistor 90 Ω. Total Harmonic Distortion 8%.	30	NC	H	A	G_2	G_1	—	H	K	—		—	**KT61**
2500	5·0	1·2	Cathode Resistor for Self-bias 120 Ω. Total Harmonic Distortion 9%.	30	NC	H	A	G_2	G_1	—	H	K	—	—	—	**KT71**
★	★	0·3	★ *For data and notes refer type* 6BJ5.	21	G_1	K G_3	H	H	A	IC	G_2	—			—	**N78**
—			★ *For data and notes refer type* 2D21.	21	G_1	K	H	H	G_2	A	G_2	—	—	—	—	**PL21**
7000	3·3	1·0	Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**PL33**
	—	1·2	Peak Plate voltage = 4 kV. maximum.	30	G_3	H	NC	G_2	G_1	—	H	K	—	A	—	**PL38**
—	—	0·8	★ *For data and notes refer type* 21A6.	32	IC	G_1	K	H	H	G_3	IC	G_2	G_3	A	—	**PL81**
★	★	0·1	★ *For data and notes refer type* 16A5.	32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—		**PL82**
	—	0·1	★ *For data and notes refer type* 15A6.	32	G_3	G_1	K	H	H	G_3	A	S	NC		—	**PL83**
	—	—	Condenser Input to Filter 60 μF maximum. Plate Supply Impedance 175 Ω minimum.	30	NC	H	NC	—	A	—	H	K	—		—	**PY31**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
PY80	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	19·0	0·3	★	★	—			—	—	—
PY81	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	F	17·0	0·3	★	★	—	—	—	—	—	—
PY82	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	19·0	0·3	★	★	—	—	—	—	—	—
PZ30	**FULL-WAVE RECTIFIER**	Half-wave Rectifier	H	52·0	0·3	Max. R.M.S. 240	200 per Plate Max.	—	—	—	—	—	—
RL7	**SHARP CUT-OFF R.F. PENTODE**	U.H.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
RL16	**OSCILLATOR TRIODE**	U.H.F. Amplifier	H	6·3	0·43	★	★	★	—	—	★	★	★
RL18	**OSCILLATOR TRIODE**	U.H.F. Amplifier	H	6·3	0·.5	★	★	★	—	—	★	★	★
TH1	**THERMO-COUPLE**	Thermo-Couple	—		0 to 0·015	—	—	—	—	—	—	—	—
TH2	**THERMO-COUPLE**	Thermo-Couple	—	—	0 to 0·03	—	—	—	—	—	—	—	—
TH3	**THERMO-COUPLE**	Thermo-Couple	—	—	0 to 0·075	—	—	—	—	—	—	—	—
TH4	**THERMO-COUPLE**	Thermo-Couple	—	—	0 to 0·15	—	—	—			—	—	—
TH5	**THERMO-COUPLE**	Thermo-Couple	—	—	0 to 0·3		—	—	—		—	—	—
U30	**CURRENT REGULATOR**	Current Regulator	F	70 to 122·5	0·1	—	—	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No
—	—	—	★ *For data and notes refer type* 19X3.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**PY80**
—	—	—	★ *For data and notes refer type* 17Z3.	32	IC	IC	IC	F	F	IC	IC	IC	A	K	—	**PY81**
—	—	—	★ *For data and notes refer type* 19Y3.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**PY82**
—	—	—	Condenser Input to Filter 50 μF ma im m. Plate Supply Impedance per Plate = 50 Ω min.	30	NC	H	A^1	K^1	A^{II}	H_t	H	K^{II}	—	—	—	**PZ30**
—	—	0·02	★ *For data and notes refer type* EF54.	33	H	A	G_2	K G_3 S	K G_2 S	G_1	K G_3 S	K G_2 S	H	—	—	**RL7**
—	—	3·1	★ *For data and notes refer type* EC52.	33	H	G_1	K	A	NC	NC	NC	NC	H	—	—	**RL16**
—	—	1·3	★ *For data and notes refer type* EC53.	16	H	K	H	G_1	A	—	—	—	—	—	—	**RL18**
—	—	—	12 mV at 10 mA heater current. Thermo-resistance 5·5 Ω. Heater Resistance 75 Ω.	10	−E	F	+E	F	—		—	—	—	—	—	**TH1**
—	—	—	12 mV at 20 mA heater current. Thermo-re istance 3·0 Ω. Heater Resistance 23 Ω.	10	−E	F	+E	F	—		—	—	—	—	—	**TH2**
—	—	—	12 mV at 40 mA heater current. Thermo-resistance 3·0 Ω. Heater Resistance 7·3 Ω.	10	−E	F	+E	F	—	—		—	—	—	—	**TH3**
	—	—	12 mV at 100 mA heater current. Thermo-resistance 3·0 Ω. Heater Resistance 2·2 Ω.	10	−E	F	+E	F	—	—	—	—	—	—	—	**TH4**
	—	—	12 mV at 200 mA heater current. Thermo-resistance 3·0 Ω. Heater Resistance 1·1 Ω.	10	−E	F	+E	F	—	—		—	—	—	—	**TH5**
				30	NC	NC	R	NC	NC	NC	R	NC	—	—	—	**U30**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
U52 / 5U4G	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	2·25	Max. R.M.S. 2 x 500	D.C. Output 250 Max.	—	—	—	—	—	—
U76	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	30·0	0·16	Max. R.M.S. 250	D.C. Output 100 Max.	—	—	—	—	—	—
UAF41	**DIODE REMOTE CUT-OFF PENTODE**	Detector, R.F. and A.F. Amplifier	H	12·6	0·1	200	6·0	−2·4	See Note	1·9	1900	—	1·3
UAF42	**DIODE REMOTE CUT-OFF PENTODE**	Detector, R.F. and A.F. Amplifier	H	12·6	0·1	200	5·0	−2	85 See Note	1·5	2000	—	1·0
UB41	**TWIN DIODE**	Detector, Rectifier	H	19·0	0·1	150 Max. per Plate	9·0 Max. per Plate	—	—	—	—	—	—
UBC1	**DUO-DIODE TRIODE**	Detector, A.F. Amplifier	H	12·6	0·1	200	3·0	−1·7	—	—	2000	65	0·033
UBC41	**DUO-DIODE TRIODE**	Detector, A.F. Amplifier	H	14·0	0·1	170	1·5	−1·55	—	—	1650	70	0·042
UBF2	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector, R.F. Amplifier	H	12·6	0·1	200	5·0	−2	100	1·6	1800	—	1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B S.	TYPE No.
—	—	—	Condenser Input to Filter 8 μF. Plate Supply Impedance per Plate = 310 Ω min.	30	NC	F	—	A^{II}	—	A^{I}		F				**U52 / 5U4G**
—		—	Plate Supply Impedance per Plate = 100 Ω min.	30	NC	H	—	—	A		H	K				**U76**
—	—	0·002	Series Screen Resistor 44,000 Ω (200 V. supply). Mutual Conductance = 19 μmhos at − 34 volts Grid Bias. As R.C. Amplifier (170 V. supply). Following Grid Leak 0·7 meg. Plate Resistor 0·2 meg. Screen Resistor 0·73 meg. Cathode Resistor 2700 Ω. Gain = 78.	28	H	A	D	IC	G_2	G_1	K G_3 S	H	—	—	—	**UAF41**
—	—	0·002	Series Screen Resistor 76,000 Ω (200 V. supply). Mutual Conductance = 20 μmhos at − 34 volts Grid Bias. As R.C. Amplifier (170 V. supply). Following Grid Leak 0·7 meg. Plate Resistor 0·22 meg. Screen Resistor 0·82 meg. Cathode Resistor 2700 Ω. Gain = 80.	28	H	A	D	G_2	G_2	G_1	K S	H	—	—	—	**UAF42**
	—	—		28	H	NC	K^{II}	D_2	S	D_1	K^{I}	H	—	—	—	**UB41**
	—	—		30	H	M	A	NC	D_2	K	D_1	H	—	G_1		**UBC1**
	—	1·3	As R.C. Amplifier (170 V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Cathode Resistor 5600 Ω. Gain = 44.	28	H	A	G_1	S	D_2	D_1	K	H				**UBC41**
	—	0·002		30	H	M	A	G_2	D_2	K	D_1	H	—	G_1	—	**UBF2**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
UBF11	**DUO-DIODE REMOTE CUT-OFF PENTODE**	Detector, R.F. and A.F. Amplifier	H	20·0	0·1	200	5·0	−2	80	1·7	1800	—	1·5
UBF80	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector, R.F. Amplifier	H	17·0	0·1	200	5·0	−2	See Note	1·75	2200	—	1·0
UBL1	**DUO-DIODE POWER OUTPUT PENTODE**	Detector, Class "A" Power Amplifier	H	55·0	0·1	200	55	−11·5	200	11·0	8500	—	0·02
UBL21	**DUO-DIODE POWER OUTPUT PENTODE**	Detector, Class "A" Power Amplifier	H	55·0	0·1	200 180 100	55·0 61·0 32·5	−13 −10 −5·3	200 180 100	9·5 10·0 5·5	8000 9000 7500	— — —	0·025 0·022 0·025
UCH4	**TRIODE HEPTODE**	Frequency Converter	H	20·0	0·1	★	★	★	★	★	★	—	★
UCH11	**TRIODE HEXODE**	Frequency Converter	H	20·0	0·1	200	2·5	(G_1 h) −2	(G_{2+4} h) 80 See Note	3·0	Conv. 750	—	1·0
UCH21	**TRIODE HEPTODE**	Frequency Converter	H	20·0	0·1	200	3·5	(G_1 h) −2	(G_{2+4} h) 100 See Note	6·5	Conv. 750	—	1·0
UCH41	**TRIODE HEXODE**	Frequency Converter	H	14·0	0·1	200	3·0	(G_1 h) −2·2	(G_{2+4} h) 105 See Note	2·1	Conv. 550	—	1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·002	As R.C. Amplifier (200 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·7 meg. Cathode Resistor 2400 Ω. Gain = 82.	27	G_2	G_1	G_3 K M	A	H	H	D_1	D_2	—	—	—	**UBF11**
—	—	0·0025	Series Screen Resistor 68,000 Ω (200 V. supply). Mutual Conductance = 22 μmhos at — 31·5 volts Grid Bias.	32	G_2	G_1	K S	H	H	A	D_1	D_2	G_3	—	—	**UBF80**
3500	5·2	0·8	Total Harmonic Distortion 10%.	30	H	NC	A	G_2	D_2	K G_3	D_1	H	—	G_1	—	**UBL1**
3500 3000 3600	4·8 4·8 1·35	1·2	Total Harmonic Distortion 10% in each case.	29	H	A	G_1	G_2	D_2	D_1	K G_3	H	—	—	—	**UBL21**
—	—	0·002	★ *For data and notes refer type* UCH21.	30	H	K M G_5	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$	$G_3{}^h$	A^t	H	—	$G_1{}^h$	—	**UCH4**
—	—	0·001	Series Screen Resistor 40,000 Ω (200 V. supply). Conversion Conductance = 7·5 μmhos at — 18 volts Grid ($G_1{}^h$) Bias. Osc. Plate 200 V. at 2·8 mA. Osc. Grid Resistor 50,000 Ω. Osc. Grid Current 0·16 mA. Osc. G_m = 3000 μmhos.	27	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	K M	A^h	H	H	$G_1{}^t$ $G_3{}^h$	A^t	—	—	—	**UCH11**
—	—	0·002	Series Screen Resistor 15,500 Ω (200 V. supply). Conversion Conductance = 7·5 μmhos at — 28 volts Grid ($G_1{}^h$) Bias. Osc. Plate Current 4·1 mA through 20,000 Ω (200 V. supply). Osc. Grid Resistor 50,000 Ω. Osc. Grid Current 0·19 mA.	29	H	A^h	A^t	$G_1{}^t$	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	$G_3{}^h$	H	—	—	K $G_5{}^h$ S	**UCH21**
—	—	0·1	Screen connected to junction of two Resistors R_1 and R_2 in series, R_1 of 22,000 Ω is connected to B+ and R_2 of 47,000 Ω to B—. Conversion Conductance = 5 μmhos at — 27 volts Grid ($G_1{}^h$) Bias. Osc. Plate Current 4·6 mA through 20,000 Ω (200 V. supply). Osc. Grid Resistor 20,000 Ω. Osc. Grid Current 0·36 mA.	28	H	A^h	A^t	$G_1{}^t$ $G_3{}^h$	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	K	H	—	—	—	**UCH41**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
UCH42	**TRIODE HEXODE**	Frequency Converter	H	14·0	0·1	200	3·0	(G_1[h]) −2	(G_{3+4}[h]) 85 See Note	3·0	Conv. 750	—	>1·0
UCL11	**TRIODE POWER OUTPUT TETRODE**	A.F. and Class "A" Power Amplifier	H	60·0	0·1	200 200	2·0 45·0	−2 −8·5	— 200	— 6·0	2100 9000	63 —	0·03 0·018
UF8	**LOW-NOISE MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·1	200	6·0	−2	(G_3) 200	0·12	1600	—	0·45
UF9	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·1	200	6·0	−2·5	100	1·7	2200	—	1·2
UF11	**REMOTE CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	15·0	0·1	200	6·0	−2	80	1·7	2200	—	1·5
UF21	**MEDIUM CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	12·6	0·1	200	6·0	−2·5	100	1·7	2200		1·0
UF41	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·1	200	7·2	−3	See Note	2·1	2300	—	1·0
UF42	**SHARP CUT-OFF R.F. PENTODE**	Wide-band Amplifier	H	21·0	0·1	170	10·0	−2	170	2·3	8500	—	0·3
UL1	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	60·0	0·1	200	55	−11·5	200	1·0	8500	—	0·02

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·1	Screen connected to junction of two Resistors R_1 and R_2 in series, R_1 of 18,000 Ω is connected to B+ and R_2 of 27,000 Ω to B—. Conversion Conductance = 7·5 μmhos at — 27·5 volts Grid ($G_1{}^h$) Bias. Osc. Plate Current 5·2 mA through 22,000 Ω (200 V. supply). Osc. Grid Resistor 47,000 Ω. Osc. Grid Current 0·2 mA.	28	H	A^h	A^t	$G_1{}^t$ $G_3{}^h$	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	K S	H	—	—	—	**UCH42**
— 4500	— 4·0	1·4 0·9	Triode Unit (t). Tetrode Unit (o). Total Harmonic Distortion 10%.	27	A^t	$G_1{}^t$	K	A^o	H	H	$G_2{}^o$	$G_1{}^o$	—	—	—	**UCL11**
—	—	0·0 7	Grids Nos. 2 and 4 tied to Cathode. Equivalent Noise Resistance 3200 Ω. Mutual Conductance = 16 μmhos at — 26 volts Grid Bias.	30	H	M	A	G_3	G_2	G_4	K	H	—	G_1	—	**UF8**
—	—	0·002	Mutual Conductance = 22 μmhos at — 16 volts Grid Bias.	30	H	M	A	G_3	NC	G_3	K	H	—	G_1	—	**UF9**
—	—	0·002	Mutual Conductance = 22 μmhos at — 42 volts Grid Bias. As R.C. Amplifier (200 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·6 meg. Cathode Resistor 2000 Ω. Gain = 77.	27	G_3	G_1	K G_2 M	NC	H	H	NC	A	—	—		**UF11**
—	—	0·002	Mutual Conductance = 22 μmhos at — 19 volts Grid Bias.	29	H	A	G_2	G_2 S	NC	G_1	K	H	—	—	—	**UF21**
—	—	0·002	Series Screen Resistor 40,000 Ω (200 V. supply). Mutual Conductance = 23 μmhos at — 34 volts Grid Bias.	28	H	A	IC	IC	G_2	G_1	K G_2 S	H	—	—	—	**UF41**
—	—	0·005	Plate Current Cut-off at — 6 volts Grid Bias.	28	H	A	S	G_2	G_2	G_1	K	H	—	—	—	**UF42**
3500	5·5	0·8		30	H	NC	A	G_2	G_1	NC	K	H	—	—	—	**UL1**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
UL41	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	45·0	0·1	170	53	−10·4	170	10·0	9500	—	0·02
						110	32	−6·4	110	6·0	8500	—	0·018
						100	29	−5·7	100	5·5	8000	—	0·018
UL44	**LINE OUTPUT PENTODE**	Line Output Amplifier	H	45·0	0·1	175	28·5	−13·5	175	4·7	7000	—	—
UM4	**TUNING INDICATOR with TRIODES**	Tuning Indicator	H	12·6	0·1	Target Volts 200	Target Current 1·4	0 for Shadow Angle of 90° in each case.	—	—	—	—	—
UM34	**TUNING INDICATOR with TRIODES**	Tuning Indicator	H	12·6	0·1	★	★	—	—	—	—	—	—
UR3C	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	30·0	0·2	★	★	—	—	—	—	—	—
UY1N	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	50·0	0·1	★	★	—	—	—	—	—	—
UY11	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	50·0	0·1	★	★	—	—	—	—	—	—
UY21	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	50·0	0·1	Max. R.M.S. 250	D.C. Output 140 Max.	—	—	—	—	—	—
UY31	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	50·0	0·1	Max. R.M.S. 250	D.C. Output 125 Max.	—	—	—	—	—	—
UY41	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	31·0	0·1	Max. R.M.S. 250	D.C. Output 100 Max.	—	—	—	—	—	—
UY42	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	31·0	0·1	Max. R.M.S. 110	D.C. Output 100 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
3000	4·25															
3000	1·7	1·0	Total Harmonic Distortion 10% in each case.	28	H	A	IC	NC	G_2	G_1	K G_3	H		—		**UL41**
3000	1·35															
—	—	1·0	Peak Plate Voltage = 3 kV. maximum.	28	H	NC	IC	G_3	G_2	G_1	K	H		A	—	**UL44**
—	—	—	Dual sensitivity type. Triode Plate Resistor 1·0 meg. for each plate lead Min. shadow angles occur at − 4·2 volts and − 12·5 volts Grid (G_1^t) Bias respectively.	30	H	NC	A^{II} DE^{II}	T	G_1^t	A^I DE^I	K G_1^t	H	—	—	—	**UM4**
—	—	—	★ *For data and notes refer type* EM34.	30	NC	H	A^I DE^I	G_1^t	T	A^{II} DE^{II}	H	K G_1^t		—	—	**UM34**
	—	—	★ *For data and notes refer type* CY2.	23	K^{II}	H	H	K^I	A^I	NC	A^{II}	–	—	—	—	**UR3C**
	—	–	★ *For data and notes refer type* UY21.	30	H_1	NC	A	NC	H_2	NC	K	H_2		—	—	**UY1N**
	—	—	★ *For data and notes refer type* UY21.	27	NC	K	NC	NC	H	H	NC	A		—	—	**UY11**
	—	—	Condenser Input to Filter 60 μF maximum. Plate Supply Impedance = 175 Ω minimum.	29	H	A	NC	A	NC	A	K	H	—	—	—	**UY21**
—	—	—		30	NC	H	NC	NC	A	NC	H	K		—	–	**UY31**
	—	—	Condenser Input to Filter 50 μF maximum. Plate Supply Impedance = 210 Ω minimum.	28	H	A	NC	IC	NC	IC	K	H			—	**UY41**
	—	—	Condenser Input to Filter 50 μF maximum.	28	H	A	NC	IC	NC	IC	K	H	—	—	—	**UY42**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
V99	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier and Biased Detector	F	3·0	0·06	★	★	★	—	—	★	★	★
VR75/30	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	★	★	—	—	—	—	—	—
VR105/30	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	★	★	—	—	—	—	—	—
VR150/30	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	★	★	—	—	—	—	—	—
W76	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	13·0	0·16	250	7·6	−3	100	1·9	1500	—	—
X61M	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·3	250	3·7	(G_1 h) −3	100	2·8	Conv. 620	—	—
X76M	**TRIODE HEXODE**	Frequency Converter	H	13·0	0·16	250	3·8	(G_1 h) −3	100	3·0	Conv. 620	—	0·7
X79	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·3	★	★	★	★	★	★	—	★
X99	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier and Biased Detector	F	3·0	0·06	★	★	★	—	—	★	★	★
Y61	**TUNING INDICATOR with TRIODE**	Tuning Indicator	H	6·3	0·3	Target Volts 250	Target Current 4·0	0 for Shadow Angle 90°	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	3·3	★ *For data and notes refer type* 99.	9	G_1	F+	A	F−			—	—		—		**V99**
—	—	—	★ *For data and notes refer type* OA3.	30	NC	K	J	—	A		J	NC		—	—	**VR75/30**
—	—	—	★ *For data and notes refer type* OC3.	30	NC	K	J	—	A	—	J	NC	—	—	—	**VR105/30**
—	—	—	★ *For data and notes refer type* OD3.	30	NC	K	J	—	A	—	J	NC	—	—	—	**VR150/30**
		0·007	Cathode Resistor for Self-bias 330 Ω.	30	S	H	A	G_2	G_3	—	H	K IS	—	G_1	—	**W76**
—	—	0·085	Conversion Conductance = 5 μmhos at − 25 volts Grid (G_1^h) Bias. Osc. Plate Current 3·5 mA through 30,000 Ω (250 V. supply). Optimum Osc. Grid Voltage = 15 V. peak.	30	S	H	A^h	G_2^h G_4^h	G_1^t G_3^h	A^t	H	K	—	G_1^h	—	**X61M**
—	—	0·085	Conversion Conductance = 5 μmhos at − 25 volts Grid (G_1^h) Bias. Osc. Plate Current 3·6 mA through 30,000 Ω (250 V. supply). Optimum Osc. Grid Voltage = 15 V. peak.	30	S	H	A^h	G_2^h G_4^h	G_1^t G_3^h	A^t	H	K	—	G_1^h	—	**X76M**
		0·11	★ *For data and notes refer type* 6AE8.	32	G_2^h G_4^h	G_1^h	K	H	H	A^h	G_2^h G_1^t	A^t	IC			**X79**
		3·3	★ *For data and notes refer type* 99.	8	F+	A	G_1	F−			—					**X99**
	—	—	Triode Plate Resistor 0·5 meg. Triode Plate Current 0·19 mA. Grid Bias − 8 volts for shadow angle, 0°.	30	NC	H	A^t	T	G_1^t		H	K	—	—	—	**Y61**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	

TYPE NUMBER CROSS REFERENCE

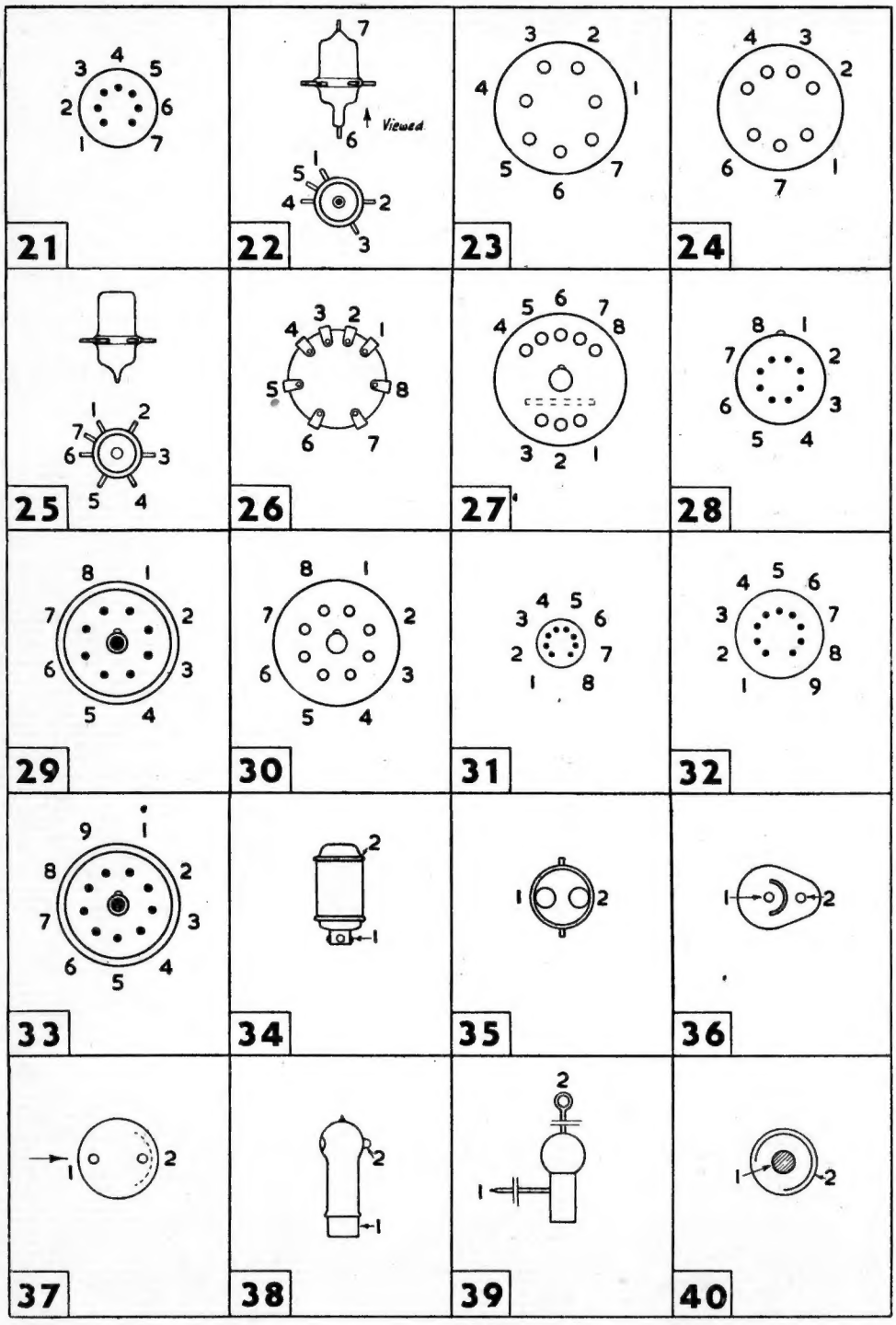
EUROPEAN—R.T.M.A. (AMERICAN)

European	*R.T.M.A. (American)*
DA90	1A3
DAF91	1S5
DAF96	1AH5
DC80	1E3
DCC90	3A5
DF67	6008
DF91	1T4
DF92	1L4
DK91	1R5
DK92	1AC6
DK96	1AB6
DL67	6007
DL91	1S4
DL92	3S4
DL93	3A4
DL94	3V4
DL95	3Q4
DL96	3C4
DM70	1F3
DY30	1B3GT
E80CC	6085
E80F	6084
E90CC	5920
EABC80	6AK8
EB91	6AL5
EBC80	6BD7
EBC90	6AT6
EBF80	6N8
EBF81	6AD8
EC55	5861
EC70	6K4
EC80	6Q4
EC81	6R4
ECC81	12AT7
ECC82	12AU7
ECC83	12AX7
ECC91	6J6
ECH80	6AN7
ECH81	6AJ8
ECL80	6AB8
EF80	6BX6
EF81	6BH5
EF85	6BY7
EF91	6AM6
EF93	6BA6
EF94	6AU6
EF95	6AK5
EK90	6BE6
EL80	6M5
EL81	6CJ6
EL83	6CK6
EL90	6AQ5
EL91	6AM5
EQ80	6BE7
EY81	6X2
EY80	6U3
EZ80	6V4
EZ90	6X4
N78	6BJ5
PL21	2D21
PL81	21A6
PL82	16A5
PL83	15A6
PY80	19X3
PY81	17Z3
PY82	19Y3
X79	6AE8
85A1	0E3
18042	6086

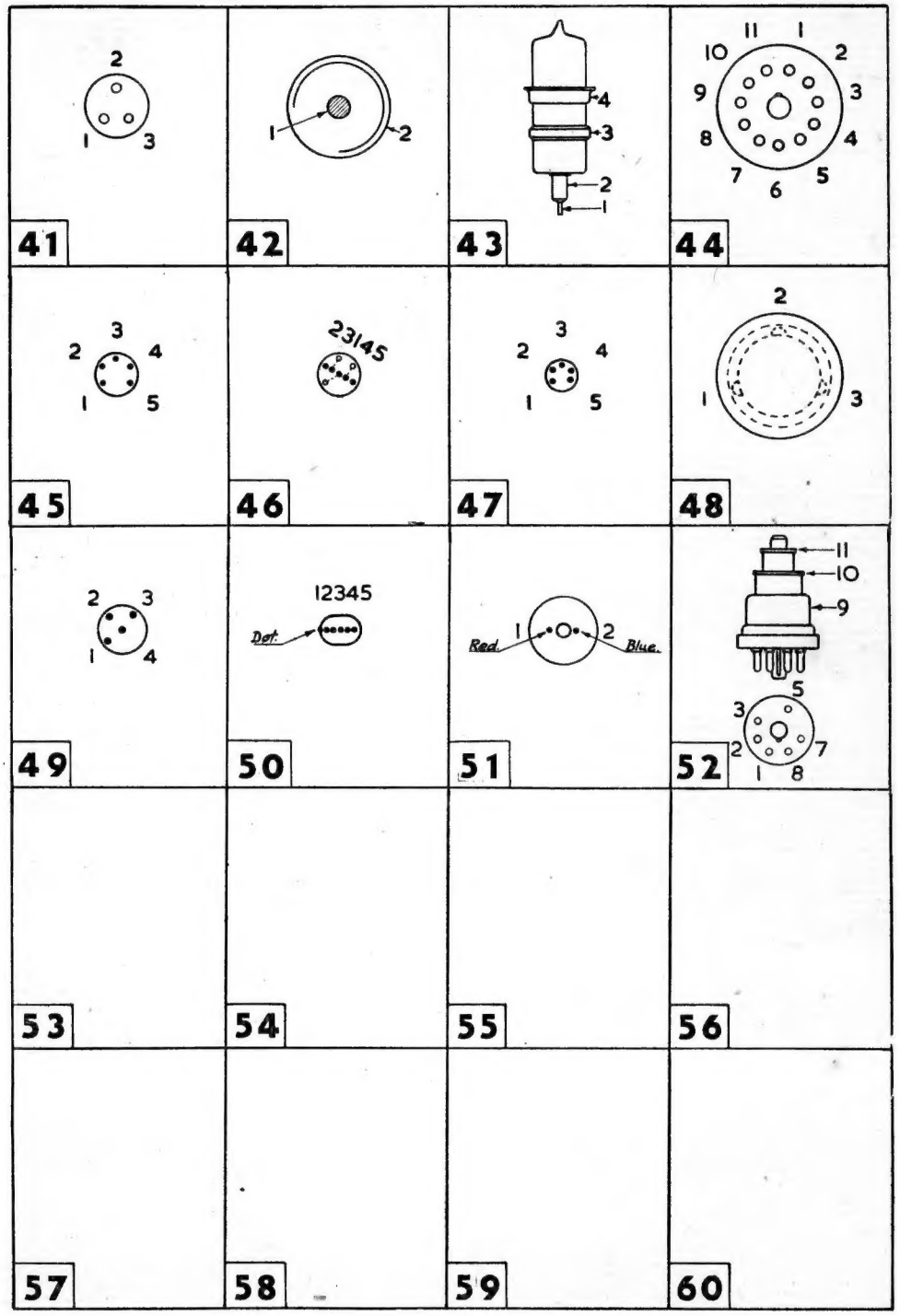
R.T.M.A. (AMERICAN)—EUROPEAN

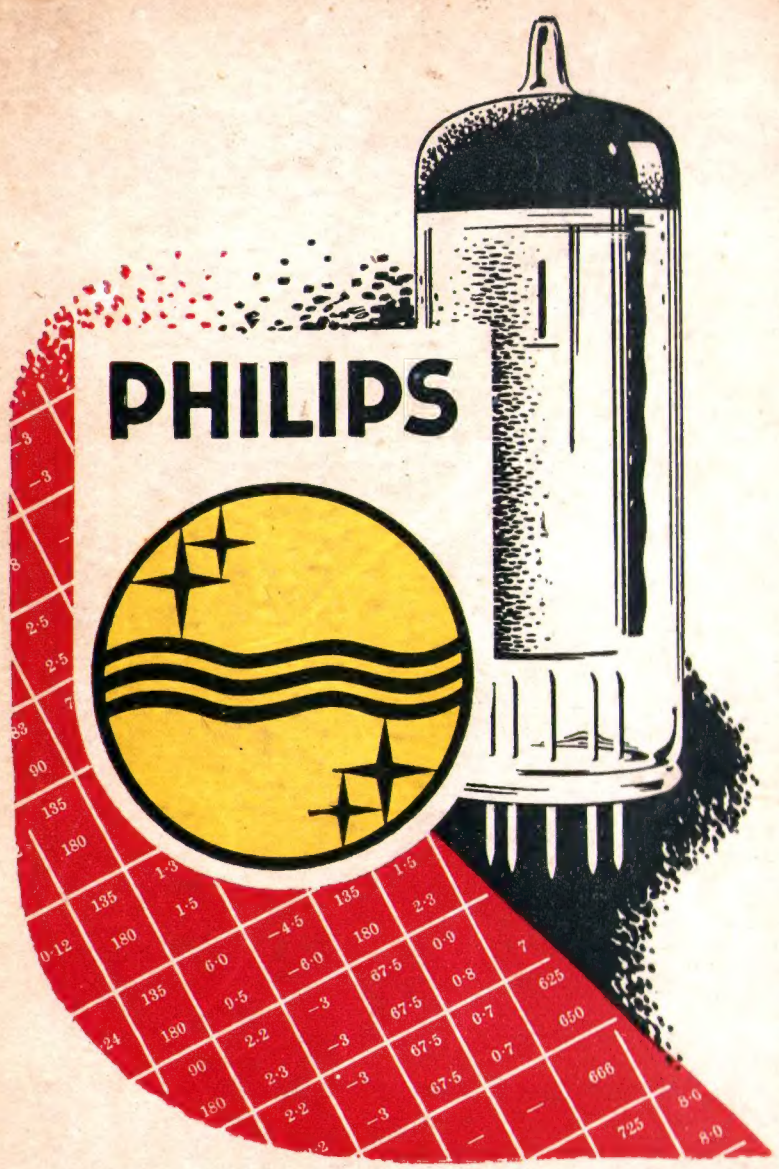
R.T.M.A. (American)	*European*
0E3	85A1
1A3	DA90
1AB6	DK96
1AC6	DK92
1AH5	DAF96
1B3GT	DY30
1E3	DC80
1F3	DM70
1L4	DF92
1R5	DK91
1S4	DL91
1S5	DAF91
1T4	DF91
2D21	PL21
3A4	DL93
3A5	DCC90
3C4	DL96
3Q4	DL95
3S4	DL92
3V4	DL94
6AB8	ECL80
6AD8	EBF81
6AE8	X79
6AJ8	ECH81
6AK5	EF95
6AK8	EABC80
6AL5	EB91
6AM5	EL91
6AM6	EF91
6AN7	ECH80
6AQ5	EL90
6AT6	EBC90
6AU6	EF94
6BA6	EF93
6BE6	EK90
6BE7	EQ80
6BD7	EBC80
6BH5	EF81
6BJ5	N78
6BX6	EF80
6BY7	EF85
6CJ6	EL81
6CK6	EL83
6J6	ECC91
6K4	EC70
6M5	EL80
6N8	EBF80
6Q4	EC80
6R4	EC81
6U3	EY80
6V4	EZ80
6X2	EY51
6X4	EZ90
12AT7	ECC81
12AU7	ECC82
12AX7	ECC83
15A6	PL83
16A5	PL82
17Z3	PY81
19X3	PY80
19Y3	PY82
21A6	PL81
5861	EC55
5920	E90CC
6007	DL67
6008	DF67
6084	E80F
6085	E80CC
6086	18042

BASE FIGURES



BASE FIGURES





VALVE DATA